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THE CONDOR

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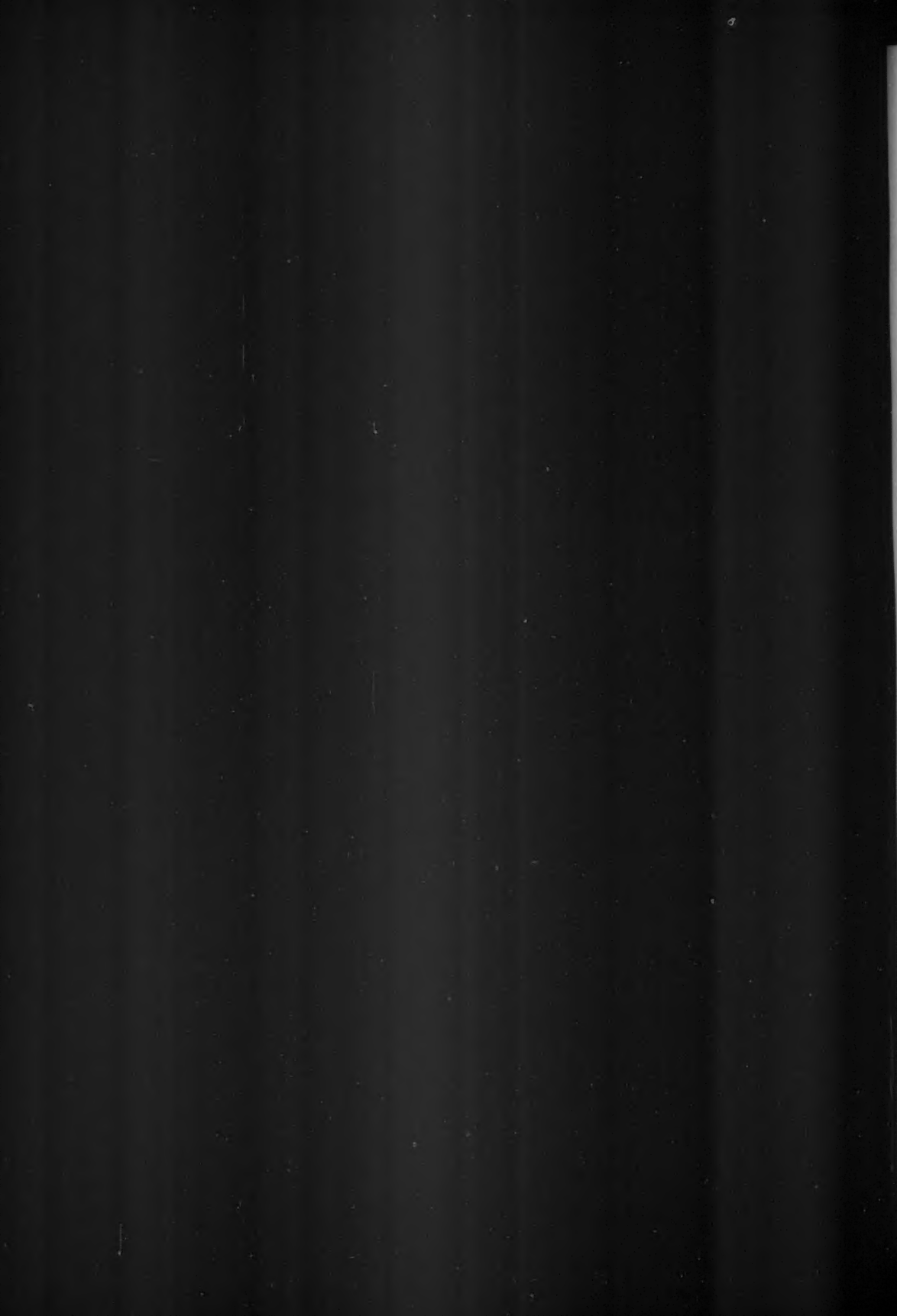
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"ANIMAL AGGREGATIONS": A REPLY

By ALTHEA R. SHERMAN

UNDER the title "Animal Aggregations: A Request for Information" in THE CONDOR for July-August, 1923, Dr. W. C. Allee has asked for the opinions of ornithologists and bird students on the following question: "Are fall migration flocks formed by the congregation of families or of individuals?" From long continued observations on the behavior and domestic relations of the forty-four species of breeding birds of my neighborhood I have been convinced that among these birds the family ties are not sufficiently lasting to serve as guiding impulses in flock formation.

The Cowbird is a conspicuous flocking species, yet the most vivid imagination scarcely can fancy that any family bond between Cowbird parents and offspring is instrumental in drawing the old and the young of this species into the flocks of autumn. Its next of kin, the Bobolink, has given its first hint of flock formation by the congregation of several old males still in breeding plumage. Likewise the first flocks of Goldfinches have consisted of old males. One of these contained nine individuals, eight of which were old males. One autumn in an early flock of this species was an abnormally pale male, that for a few days was followed by two begging youngsters, which he fed, but they soon disappeared. Some years ago observations were begun on the Killdeer, with the intent of finding proof that its flocks were composed of families that were summer residents of this locality, in which there usually are three or four breeding pairs to the square mile. Daily records of the numbers counted were kept, but these figures were against rather than in favor of a supposition that the Killdeers had assembled in families from adjacent territory.

The various blackbird species of my neighborhood raise only one brood in a season. They gather into flocks as soon as their young are self-supporting. Doubtlessly many of their flocks contain all of the members of some families, as may be true also of flocks of Prairie Horned Larks that feed within hailing distance of them; but the Larks earlier in the season have raised one or two other broods. The same is true of Mourning Doves and Song Sparrows before their flocking time comes. It is unreasonable to suppose that binding ties of family affection are stronger between parents and their last broods, than between them and their earlier broods. Crows and Blue Jays do not flock until many weeks after their family groups have disbanded.

Apparently insufficient weight can be given to observations of the various species at flocking time. It would seem that much greater value ought to attach to the diligent study of the strength and duration of the ties that bind mated birds as well as those between parents and offspring. Cases of swans and of geese, that have mated for life, are said to have been known; but in more than a score of years given to an

intensive study of the forty-four species nesting close at hand I have found the bonds between parents and their young are of very short duration, and that those between mated birds are of the most tenuous sort.

Without exception every species hereabout, that nests more than once a year, has a period of song and re-wooing before the second and third nestings. That the old mate is not always won again was proved by a House Wren which had remained a bachelor until the first days of August, when he secured for his mate a female that previously had nested forty yards away with another mate. Without a rival near to supplant him Phoebe begins calling before his first brood has left its nest. A Brown Thrasher has been seen to sing while his bill held a May beetle that he was carrying to a young one. By their behavior the birds indicate that they do not deem the marriage bond very strong or lasting.

Since 1897, Flickers have nested in our barn. For their nesting and roosting needs seven boxes have been placed within the barn and back of holes in the siding made by these woodpeckers. Through peep-holes in the tops of the boxes an observer, unseen by the birds, can watch every phase of the nest life. Thus have been studied the home life of the Flicker, Screech Owl, Sparrow Hawk and House Wren. It is against the female Flicker that the greatest number of instances of domestic desertion has been recorded. Time and time again she has been known to desert her home, her mate, and her helpless little ones, the last named left to die from starvation. In the blessed days of yore but a single pair of House Wrens nested on our place. Their second brood was a week or more old when the father eloped and was found nest-building with another mate. Trouble for the Brown Thrashers' nests containing eggs is always looked for when an unmated male Thrasher arrives, and expectations are not disappointed. Likewise anticipated trouble once came following the death of a sitting Robin. There ensued a cock Robin fight near a female with a nest nearly finished on a window ledge, which she deserted.

A little close observation reveals the exceeding frailty of the matehood bond among birds; also that the ties binding parent to offspring are often prematurely broken. Flocking is a prominent habit of the Red-winged Blackbird; nevertheless my note-book records show numerous instances of the female Redwing's desertion of her nest, sometimes with well grown young in it. This, taken with polygamous tendencies occasionally displayed by the male, does not argue forcibly for great continuity of association within the family circle.

Although the family of a Bobwhite or of a Prairie Chicken may hold together for months, the families of most of my bird neighbors are speedily dispersed; three or four weeks after nest-leaving is the duration for some, while for others it is much shorter. After Phoebe's first brood has left the nest, only eight to ten days elapse before she begins the laying of her second clutch. Whatever sins as a home-breaker the Brown Thrasher must answer for, he is praiseworthy for his strict observance of a "share and share alike" principle in the performance of home duties, from the laying of the first twig to the weaning of the last fledgling. That his family circle is divided soon after the young leave the nest seems to be established by later observations in accord with an incident of many years ago when only one pair of Brown Thrashers nested on our place, raising two young ones. One of these remained near the house with one parent, while the other was taken by the other parent to a locality a hundred yards or more away, where they were found daily for some time.

It is not easy to follow the history of individual birds throughout a summer, yet the Flicker and the Phoebe have offered opportunities for such study. The dates for spring arrivals and for fall departures for both species are nearly identical. Both

species nest in our barn, and the males of both roost in the barn for seven or eight weeks after their mates and offspring have disappeared. Although these are not flocking species the early dispersion of their families has some bearing on the duration of the family association.

With greater exactness we may now consider the breaking of the home ties in the family of the Chimney Swift. If this species can not be said to flock, it certainly congregates in vast numbers at roosting time. During six seasons of assiduous watching of their home life nothing blameworthy has been found in it, even when measured by the most critical standards for human life. Gentle and devoted to one another, they show similar amiability and courtesy to the adult stranger that comes into their home to share the work of feeding and brooding their young. Their nest (which has been used for six nestings and appears serviceable for sixty more) is built in a simulate chimney, made of boards, having peepholes, two windows, and a door in it. At night the chimney can be illuminated by a lighted lamp placed before a window, and one can see how many of the birds have come home to roost. Thereby it has been learned that the dispersion of the Chimney Swift's family is gradual.

It has been said that Chimney Swift behavior within the home is ideal even to the treatment accorded the "nurse maid" that assists in the rearing of the sextette of clamoring little ones. But their plan of home occupancy may fail to appeal to the tastes of any one except the Brooklyn man and the city commuter, for the Swifts use their chimney only to roost in at night and during the period definitely devoted to nidification. For 116 days in one season and for 113 days in another the chimney may be considered the true home of the Swifts. Very near the middle of the period the eggs are hatched. The nest is vacated by the young nineteen days after the hatching. Thereafter for about two weeks they are fed while clinging to the wall, but during the last days of the fortnight they make short excursions outside. Then for a period averaging about three weeks they occupy the chimney only at night, returning to it not as a family unit, but one or two at a time. For three or four nights before the Swifts are seen for the last time their numbers have decreased and on the last night or the last two nights only two Swifts return. These may be the parent birds.

The home ties have been broken. This eminently congregating species has left its home one by one or two of them together. No one can say if they started south at once. Most likely they did not, but joined for a time some of the vast throngs that nightly pour into the chimneys of our neighboring river towns. In such places Swifts roost for six or more weeks after those here described have left their natal chimney. However that may be, they have given positive proof that they went as individuals and not as a family group.

As already has been stated the arguments here advanced are based on the study of forty-four species of birds found nesting in my neighborhood. The Swallows and the Prairie Chicken are so near extermination that their flocking habits no longer can be studied here. It is not intended that anything herein mentioned shall imply that flocking of other species may not begin by the coming together of two or more families of the species.

In conclusion, as bearing on this question, several important quotations are given. The first is from an article by Major Allan Brooks in *THE CONDOR* for September-October, 1921 (p. 156), and reads: "I have a theory that many of the females of the *Limicolae*, especially when they are larger and handsomer than the males, do not remain on the breeding grounds after the young are hatched, but turn them over to the care of the males and start on their southbound journey at once. There is considerable evidence to corroborate this, covering a number of species." In

this magazine for January-February, 1922 (p. 26), the same author when speaking of the lack of solicitude for the young displayed by the males of all wild duck species concludes with these words: "In the case of the Buffle-head the males have totally disappeared (apparently all leaving the country entirely) before the first broods of young are seen." To this should be added an observation made in Greenland on the Northern Eider by Mr. Langdon Gibson and reported in the Auk for July, 1922 (p. 359): "By July 26, when hatching was completed, males began gathering in large flocks, and by August 5 had disappeared, leaving the females to guide the young ones south." In the July, 1916, Auk (p. 258), Professor Julian S. Huxley asks: "If the flock is the unit, does the pair persist within the flock? . . . In some birds this is definitely not the case, since the sexes separate and the flocks are almost all of one sex: e. g. *Fringilla caelebs*, the Chaffinch." The last quotation is taken from North American Fauna, No. 46 (p. 28), in which Mr. E. A. Preble relates the exceedingly interesting observations made by himself and by Dr. G. Dallas Hanna on the Pallas Murre, a breeding species of the Pribilof Islands. "By the end of August most of the birds have left the breeding rookeries; at this time many late-hatched young are deserted and soon perish, the desire of the mother to accompany the departing flocks evidently being stronger than the parental instincts. Hanna states that on August 31, 1913, most of the murre had gone, and that many young ones were falling from the cliffs."

National, via McGregor, Iowa, December 27, 1923.

BANDING NOTES ON THE MIGRATION OF THE PINTAIL

By FREDERICK C. LINCOLN

Contribution from The Baird Ornithological Club

THE following notes, based upon the return records of three banded Pintails (*Dafila acuta tzitzihoo*), it is believed present features of special interest and contribute to our knowledge of the migrations of this species.

Pintails range over most of North America at some seasons of the year, the only portion of the continent where they are not regularly represented being the regions to the north and east of Hudson Bay. Their breeding grounds include practically all of those States west of the Mississippi that are north of the fortieth parallel, although by far the greater number nest in the central Provinces of Canada and in Alaska to the Alaskan Peninsula and the Arctic Coast. During migrations, the Mississippi Valley and Pacific slope flyways are followed by the great bulk of the birds, although they are plentiful at such seasons throughout all of the intervening territory. In winter they are found commonly from the southern limits of their breeding range, south to Cuba, Porto Rico, and the Pacific coast of Mexico. This vast range should be borne in mind when considering the following notes.

Dr. Wetmore has already shown* that there appears to be a fall migration of Pintails from the Salt Lake Valley, Utah, to the valleys of California, which is further substantiated by recent information from one of the ducking marshes in the northern part of Kern County, California. Mr. Paul S. Wetmore, of Armona, Cali-

* Migration Records from Wild Ducks and other Birds Banded in the Salt Lake Valley, Utah: U. S. Department of Agriculture Bulletin No. 1145, May 10, 1923, contribution from the Bureau of Biological Survey, by Alexander Wetmore.

ifornia, the observer who secured banded Pintail no. 232018, writes that he has "observed on a good many mornings at about eleven o'clock that there seems to be a good sized flight of large bands of sprig directly from the east. There are no preserves or large bodies of water in this direction sufficient to account for a flight at this time, and the writer is wondering if one of the passage-ways through the Sierra Nevada mountains lies directly east of Tulare Lake." As a matter of fact, in view of the many occurrences of this and other species of ducks on lakes and streams at relatively high altitudes, it is extremely doubtful whether the mountains anywhere offer much of a barrier, although they may have a certain influence in affecting the direction of the migration of many flocks of ducks, as of other groups.

The Pintail killed by Mr. P. S. Wetmore was banded at Davidson, Saskatchewan, August 12, 1923, by Mr. R. Lloyd, one of the Canadian coöperators of the Biological Survey in the bird banding work. It was killed at the Hanford Duck Club in northern Kern County, California, on October 2, 1923. The date of banding strongly indicates a bird that was hatched or had bred in the immediate neighborhood. (Mr. Lloyd's record does not state whether the bird was an adult or a juvenile.) In roughly tracing a probable course for this bird it will be noted that this can be easily done to include a more or less connected chain of lakes south and west through Montana, Wyoming, Utah, and Nevada to the point of recovery. Should further recoveries of banded Pintails bear out this hypothetical route, they will provide the solution for an interesting and important phase in the migration of this species.

It seems advisable to consider the two other returns together, as they were both banded in the Mississippi Valley: No. 102145, male, marked at Oakville, Iowa, on March 10, 1923, by Mr. Allen Green, and killed at Los Baños, California, on October 21, 1923; and no. 203624, female, banded at Portage des Sioux, Missouri, on March 18, 1923, by Mr. John Broeker, and killed at the Grey Goose Hunting Lodge, Butte County, California, on October 8, 1923. In both cases it may be safely assumed from the dates of banding that the birds were moving northward at the time of marking, which is in keeping with the known habits of this species to push north in the spring as fast as open water appears.

Butte County, California, lies in the Sacramento Valley, and the point of recovery is, roughly, about 80 miles north of Sacramento. Although there are numerous lakes and streams that connect this area with the breeding grounds in Alberta and Saskatchewan, in view of the almost directly north and south line of the Sacramento Valley it seems more probable that the birds came from much farther north. Observations in the vicinity of Puget Sound and elsewhere in the States of Washington and Oregon as well as in British Columbia have already established the fact that in the fall this is locally one of the most abundant ducks. It is true that these birds may have bred a few hundred miles to the east and made a short migratory flight directly west. This, however, would leave out of consideration the great breeding grounds of Alaska and the Northwest Territories.

It therefore seems equally probable that the bird in question might have nested in the most northern part of the breeding range of the species and have followed the Pacific coast flyway to about the latitude of Puget Sound or the mouth of the Columbia River, there continuing southward, but inland via the lakes and rivers of Oregon to the northern end of the Sacramento Valley.

The recovery of no. 102145 from Los Baños, in the San Joaquin Valley, about 75 miles south of Stockton, California, adds another bit of substantiating evidence that may with equal propriety be applied to either of the more or less hypothetical routes outlined above.

It is obviously a dangerous policy to attempt to elucidate definitely the movements of any widely distributed species by applying to the case a few records of the positive character of bird banding returns. Such cases, frequently of a most striking and unexpected nature, may be no more than exceptions to a general rule. On the other hand, they often point the way for more extensive investigations by indicating the great fields of the unknown that are still awaiting intensive treatment.

Biological Survey, Washington, D. C., December 12, 1923.

OCURRENCE AND BEHAVIOR OF CERTAIN SHOREBIRDS IN SOUTHERN CALIFORNIA

By ROLAND CASE ROSS

THE following observations were made in the marshes at Playa del Rey, Los Angeles County, during the period from June 9 to October 7, 1923. There the shorebirds frequent the shallow waters spread out in great sheets over the mud flats, and also the shallow waters found in growths of salicornia and sedgy places. They are less common about the deeper waters, such as in the duck ponds.

Lobipes lobatus. Northern Phalarope. On August 30, found in numbers; September 3 there were many large flocks on the ocean beyond the surf, from Del Rey to El Segundo pier; September 10 smaller numbers in marsh; more flocks on ocean. By October 10 only a few birds were about.

They were observed sleeping on land and water, bill along the back under a wing. Their ablutions were absurd attempts to get a swan-like breast and neck under water, when such airy grace and buoyancy forbade any sub-aquatic ventures. To get the proper ducking the Phalarope stretches up and drives his pretty head and breast down in the water, which effort promptly forces his tail-end up; whereupon like a cork he rebounds, to ride high and dry above the water with hardly a sign of moisture on the close-fitting plumage. At once he jerks up and ducks again, and again, all to little avail, seemingly. This up-jerk and ducking motion can be observed at a good distance, and the birds may be identified by it.

The Northern Phalarope is quite fearless in this region but seldom does one find the birds so confiding as in the following instance: Mr. Ray Francisco, the warden for the gun club on this marsh, was working in water a foot or two deep, pulling out sedges, dock and arrowweed. The Northern Phalaropes took an interest in this roiled up water and drew close to dab at the surface and "whirligig" about in their unique way. As the man kept at work they drew nearer until actually about his feet. They stayed with him until he stopped work in that section.

Steganopus tricolor. Wilson Phalarope. On July 20 a single bird was seen; on August 16 the birds were reported here in numbers by members of the Los Angeles Audubon Society; on August 30 and on September 1, 3 and 6, a flock averaging twenty individuals, and on September 16 one only.

As I found them the birds kept fairly well together; though scattered they covered a definite area. Among the other waders their uniform gray or brown-gray set them off in a distinct mass. When feeding along the shallows with Least, Western and Red-backed sandpipers, they differed from them not only in size and color, but in their habit of steady, *energetic* walking and the constant "sidesweeping" with the bill. Occasionally they picked objects from the surface with their needle bills, but this was not very actively pursued.

In deeper water they fed among the Northern Phalaropes, Knots and Dowitchers, wading along until they swam in places. However, they were able to wade where the Northern swam. At such depths they feed with the head clear under and the energy of the feeding operation was indicated by the motion of the tail. They commonly walked steadily back and forth through the deeper sections of the ponds, and in such deep places they moved as headless bodies, evidently feeding as usual in

the surface mud. From the vigorous side moves of the tail it would seem they were feeding in their usual manner as well, that is "sidesweeping." When the birds were standing to feed in the deeper places the tail was again much in evidence, and indicated the manner of feeding. This would seem to be a probing motion performed with some rapid vibration which was communicated to the tail as a series of quivers. It is rather a droll sight, and arresting as well, to see a certain area marked out by headless gray bodies buried in the water up to the bend of the wing, the vibrating tail indicating the vigorous operations being carried on down below. It seemed their best feeding was in the deeper waters. But whether walking or standing at such depths (while engaged in feeding) they constantly raised the head from the water to give a short look before returning below the surface. This motion and the erect and elevated position of the head were significant field characters to me. In an area alive with countless moving waders the grayish birds, half submerged and working with such uniform diligence, could be easily overlooked were it not for such characteristics as the sidesweeping motion and the suddenly upraised head held motionless for a brief moment before returning to work.

The following field marks for the fall season were evident to me:

When moving: 1. Long neck, legs and needle bill. 2. "Sidesweeping."
3. Energetic but steady walking when at water's edge, contrasted with the changeful and irregular movements of other small waders. 4. In deeper waters the tail wagging caused by the sidesweeping below the surface. 5. Large area of white on rump and tail (except the tip) and an unmarked wing.

When quiet: 1. Uniform brown gray color, in mass effect. 2. Submerged head and neck. 3. Quick head raising and momentary gaze. 4. Tail vibration when standing to feed in deep water.

These characters, though not striking in a single bird among hordes of various sandpipers, are most evident and do attract attention when a flock of the phalaropes is at work. Their actions mark out from the moving sea of mingled waders a definite area where they are.

Recurvirostra americana. Avocet. On September 16, Messrs. Wyman and Hoffmann pointed out an Avocet "tipping" for bottom food in water where he was swimming. In plunging the foreparts beneath the water his body turned as if on a pivot. He maintained a vertical position by kicking out, quite often thrusting the long "blue-stocking" legs clear of the water. Coming up, the mandibles were worked rapidly before the next plunge was made.

While the colony was nesting in June I found several nests with demolished shells. Two or three hundred gulls habitually rested on a portion of the mud flat nearby, but I never saw them robbing eggs. One, however, was so hotly pursued by an Avocet who charged the gull repeatedly and like a meteor from every side, that the big flapper screamed for mercy, guilty or no.

Macrorhamphus griseus scolopaceus. Long-billed Dowitcher. One found on June 9. None seen thereafter until July 12, when a flock of thirty was found. They were in migration evidently, for they rose and maneuvered in beautiful formation every few minutes. Finally at dusk their tinkling voices were lost in a distant flight and I left the marsh convinced that I had witnessed the departure of a migrant flock. Small flocks were found September 1 and 6, and on until October 7, the numbers being a dozen or less to a flock.

Calidris canutus. Knot. On August 17, Miss Mary Mann Miller found Knots here; on August 30 I located two small flocks. As the individuals wandered apart in feeding the numbers changed each time the birds were put up. I made out at least nine birds; but not until September 10, after five more visits, could I be sure of the total, fourteen birds. These stayed about in flocks varying from four to nine (at times in one group of fourteen) until September 20. My next visit, September 26, was the last, and I neither saw nor heard them. The area they favored was close to the duck blinds and I was not allowed to enter that section of the marsh, with the gunning season so near. It is my opinion they were gone by the 26th, as before that date I had always been able to locate them in certain areas.

When feeding close together and put up, they bunch well and separate frequently from the other waders. If the flock is scattered among the others the Knots join in the maneuvers of the mixed flock. They are easily distinguished in the

crowd by their large *sandpiper* size, the large white rump area, and the prominent bill carried at an inclined angle. The heavy, hoarse voice located them instantly, whether a-wing or afoot.

The Knots fed at times in water above their bellies, and frequently joined with Dowitchers in quietly probing in some one spot. Both birds probe with head and bill under water, but the Knots have a habit of moving before probing again, while the Dowitchers commonly work in one spot for some time. Often the Knots left the Dowitchers, and the still-probing business, to march in a line or a bunch through the deep portions and feed by plunging the bill as they moved. This the Dowitchers do, but not on the rapid march and not, to my knowledge, in a close flock.

When in shallows and on bare mud they walk industriously but not hurriedly, holding the bill pointed down and picking with it as they move. Their appearance when on the move is quite erect, contrasting with most other waders. Thus the Least Sandpipers run about with faces to the ground, the Red-backs look dumpy, etc. There was a constant shifting of individuals in a flock due to desertions and re-enlistments. While one bird would fall out of the parade and work alone, another would hop out of a sedgy cove and flutter over to the group. While watching the flock the low croaking voices of stragglers could be heard from several sides. As a group, they kept out of the sedges and marsh grasses; but single birds were often found pushing through them.

The Knots allowed far closer approach than Yellowlegs. Frequently they have fed to within twenty or twenty-five feet of me, seated in the open. Yet they are more wary than Dowitchers and smaller pipers. With heads stretched up they walk long-leggedly away, turning to look, and giving a slight head-ducking motion.

In size the Knots are larger than Killdeer and a little smaller than Dowitchers. When standing by the latter the Knot's bill is seen to be about half as long as the Dowitcher's. A further distinction is the Knot's grayer coloration (in the fall season). When flying together the bills and color separated them, but a quicker distinction was found in the large area of white on rump and tail coverts of the Knot; the Dowitcher has a restricted and vertical white rump patch. The hoarse croak was in striking contrast to the clear xylophone-like tinkle of the Dowitcher's cry.

In form, the Knot is a large edition of the smaller sandpipers. Except for the black bill and the white rump, upper and lower tail coverts, and back portion of the belly, the bird is of fairly uniform gray color. The head is lighter and the cheeks, throat and line over eye show a trifle lighter still. The color, larger size and sedate walking distinguish the Knot from the smaller waders. The Wilson Phalarope comes nearest in color and size. The habit of picking while walking is distinctive in that the bill is pointed vertically, seldom at an angle.

The common call is a low-pitched, hoarse "skéuk," the lowest and heaviest voice on the flats. It struck one as a dull croak, coming pretty regularly from the feeding birds and especially strong when they took wing. A lone bird in joining the flock would croak his coming. The sound can be imitated in quality and form but in a higher pitch. Make the facial contortions necessary to "cluck" to a horse, but don't "cluck;" make it "skéuk" and locate it in the wisdom teeth on the side being dislocated. Pitch it low; it will still be two tones too high. At a distance the sucking or harsh quality is lost. A softer, more musical rendition is given when the birds are well bunched and feeding, which came to my ear as "chōōk."

Numenius americanus. Long-billed Curlew. My notes record this bird only twice, on June 9 and September 16, a single bird each time. I recall seeing a few at some other place, but at best that makes only three occasions. Is this an actual scarcity or merely my misfortune?

Nature Department, City Schools, Los Angeles, California, February 1, 1924.

THE STATUS OF THE FLORIDA GALLINULE OF WESTERN NORTH AMERICA

By DONALD R. DICKEY and A. J. VAN ROSSEM

OWING to the scarcity of western specimens, the systematic status of the colonies of the Florida Gallinule (*Gallinula chloropus cachinnans*) which occur in California and Lower California has been in doubt since Mr. W. W. Cooke* and Mr. Outram Bangs† first called attention to their isolation and to the consequent possibility of geographic variation in the west. In an effort to determine whether or not variation has actually occurred, we have recently assembled 24 adult birds of this species from California, and 13 from Cape San Lucas, Lower California. These birds have been carefully compared with a representative series of 12 skins from the southeastern United States, chiefly from Florida. The results of this comparison are detailed below, in the belief that such investigations are of equal interest to the systematic worker, regardless of whether they indicate the need of recognizing additional races, or not.

Color.—Four of the Florida birds are darker and redder than any bird that we have seen from the west in comparable plumage. On the other hand, the grayest example of the entire series of 49 birds chances also to be from Florida. The rest of the series is remarkably uniform when skins in equal stages of plumage-wear are compared. Apparently, there is no constant color difference between eastern and western birds.

Size.—The wing and tail measurements of western birds of both sexes slightly exceed those of eastern birds, but there is such excessive overlap in both of these measurements as seemingly to nullify their critical value. Little or no variation is discernible in the measurements of bill, tarsus, or middle toe, since the greater average length of these parts in the case of western females is entirely offset by the shorter comparative measurements in western males. Lower California birds agree so perfectly with California specimens that birds from these two adjacent areas have been grouped together in the following tabulation:

MEASUREMENTS

Males from California (16), and Cape San Lucas (5).					
	Wing	Tail	Bill ¹	Tarsus	Toe
Max.	197.	82.5	29.0	60.7	70.0
Min.	173.	70.0	25.5	54.5	61.5
Av.	184.	76.7	27.2	56.8	65.0
Males from the Eastern United States (9)					
Max.	183.	78.5	31.0	61.7	72.0
Min.	167.	68.5	26.5	50.5	58.5
Av.	176.	73.6	28.1	56.6	66.2
Females from California (8), and Cape San Lucas (8).					
Max.	179.	77.0	27.4	56.3	65.5
Min.	161.	66.0	24.5	51.5	57.0
Av.	171.	70.9	26.2	54.1	60.9
Females from the Eastern United States (3).					
Max.	169.	68.5	26.5	54.5	61.7
Min.	163.	64.0	24.5	50.7	59.0
Av.	165.	66.8	25.5	52.3	60.2

¹ From anterior projection of feathers on upper mandible to tip of culmen.

In conclusion, we feel that the slight wing and tail difference between eastern and western birds is entirely insufficient to warrant the separation of a western race. Both the California and Lower California gallinules, in our opinion, should therefore continue to stand as a part of the wide-ranging race, *Gallinula chloropus cachinnans*.

Pasadena, California, January 12, 1924.

* Proc. New Eng. Zool. Club, 5, pp. 93-99.

† U. S. Dept. Agric., Bull., 128, p. 40.

ON THE REVEALING AND CONCEALING COLORATION OF BIRDS:
AN UNPUBLISHED LETTER BY THEODORE ROOSEVELT

THE OUTLOOK
287 Fourth Avenue
New York

Office of
Theodore Roosevelt

February 2nd, 1911

My dear Mr. Kofoid:

I have read Mr. Tracy's pamphlet with great interest. He seems to me to have made his case very clear.* There is one point, however, which I would like to suggest to you and to him. This is where he speaks of the dark colors of the crows, saying (that such) [the] coloration "can exist largely because of their size and aggressiveness and therefore of their immunity from reptatorial [sic] birds," and added that seed-eating birds of delicate flesh and harmless disposition could not have developed black plumage like that of the raven, because (they) [it] would have become extinct for lack of protective coloration. Now it seems to me that this is negated by the fact that cow-buntings are numerous. Indeed, I might go further and say that the abundance of purple and rusty grackles, yellow-headed grackles and red-winged blackbirds, not to speak of bobolinks, is proof to the contrary. With some of these birds, the black plumage only exists in the male during the breeding season; but the grackles are (always) quite as conspicuous except in point of size as are ravens, and the cow-buntings which are very plentiful are almost as conspicuous—the cocks quite as much, and the hens not *much* less. From my piazza here in the Summer I can watch close by both grasshopper sparrows and cow-buntings. The grasshopper sparrows behave just as Mr. Tracy described. They try to hide, and I have not a doubt that their coloration has a concealing or protective value both when they crouch and when they skulk through the grass. But the cow-buntings, as they stalk about over the grass, make not the slightest effort to hide, and they are just as conspicuous as little crows or ravens would be. Their coloration has not the smallest protective or concealing quality. They are not big; they are not aggressive; their flesh is delicate; and yet they are very common, and are striking examples of an instance where the concealing coloration theory completely breaks down.

In my criticisms of Mr. Thayer's article, I have been very careful not to criticize the general theory of concealing or protective coloration. That it (applies) [exists] in multitudes of cases, I have no question. There are multitudes of other cases where I do not think that, as yet, we are able to say with definiteness one way or the other (as to its application) [on the matter]. There remain very large numbers of cases where his theory is certainly without even the smallest foundation of fact.† The comparison I made with Agassiz and some of the other ultra-glacialists is applicable. In the Northern continents the discovery of the effects of glacial action was of enormous importance, but

* I am not certain about "sky pattern". My experience is that colors show as conspicuously against the sky as against any other background. A white gull or pigeon is (quite) [as] visible [as] against the sky.

† In the immense class of humming birds there is not one species in a score to which his theory, as he states it, can apply. See what Hudson says about this. It does not apply to swallows; the brilliantly colored species, usually exhibit concealing coloration, are infinitely more numerous than those to which the theory could by any possibility apply—the bank swallows (the swifts).

it was a simple absurdity to try to explain phenomena in South America, and in Africa—in the Amazon Valley, for instance—on the theory that the land had been subjected to glacial action. It is similarly a wild absurdity for Mr. Thayer to make such sweeping announcements as he does where he says, in speaking of the nuptial dress of birds, that even this dress is protective. But we can go much further than this. There are unquestionably large numbers of species of both mammals and birds as to which Mr. Thayer's theory has not the smallest particle of justification. Indeed merely reading his own book shows such a fantastic quality of mind on his part that it is a matter of very real surprise to me that any scientific observer, in commenting on the book, no matter how much credit he may give to Mr. Thayer for certain discoveries and theories, should fail to enter the most emphatic protest against the utter looseness and wildness of his theorising. Think of being required seriously to consider the theory that flamingoes are colored red so that fishes (or oysters for that matter—there is no absurdity of which Mr. Thayer could not be capable) would mistake them for the sunset! This is only an extreme example of the literally countless follies of which Mr. Thayer is guilty. I think that serious scientific men, when they come to discuss Mr. Thayer, should first of all and in the most emphatic way repudiate the ludicrous part of his theory, the part in which he pushes it to extremes.* There then will remain much matter for serious discussion. But there can be no serious discussion of the theory as a whole until such eliminations have been made. Our first business is to see whether, as he says, the law is one of universal (and practically inclusive) potency, or whether it is one of many laws, all of which (are limited by others, and) act with various effects. Of course you are familiar with Allen's pamphlet on *The Influence of Physical Conditions in the Genesis of Species*, and also of course you are familiar with Nelson's very interesting discussion on *Directive Coloration in the Southern Jack Rabbit Group*.

What I would like to get is a serious study by a competent scientific man who will first of all try to distinguish between cases where the coloration is concealing, or protective, and the cases where it is not. At this moment here on the Sound there are two kinds of ducks found in far greater abundance than any others. These are the surf ducks or scoters, and the long-tailed ducks or old squaws. The former are black, or in the case of young birds so dark a brown that the effect at a distance is the same. They are as conspicuous as ravens. They can be seen on the water as far as it is possible to see anything. Their coloration is not only not concealing or protective, but it is in the highest degree advertising. The old squaws have a broken pattern of coloration, and while they are conspicuous birds they are very much less conspicuous in coloration than the scoters; but they are the most noisy and restless of any ducks. They can be heard long before they are seen, and they are almost always moving. I do not believe that they ever escape observation from any possible foe (owing) [thanks] to their color. Now as to these ducks—the most numerous ducks round here, the most successful in other words—Mr. Thayer's theory certainly does not apply. It is just the same with land birds. The soaring hen hawks and the (bigger) true falcons alike are always conspicuous even to human eyes. It simply is not possible, as far as I can see, that they are helped by their coloration in catching prey. If they are, the fact must certainly be shown by a totally different series of experiments from anything that Mr. Thayer has even attempted.

So with a number of our smaller birds. Blue birds, Baltimore orioles, scarlet tanagers, red-winged blackbirds, grackles, (swallows, indigo buntings, towhees,) and

* To discuss the effects of glacial action, for instance, would be absurd without the statement that it was potent only in boreal realms [and] or at high elevations.

many others are either all of the time, or at certain important seasons, colored in a manner most calculated to strike the attention.* Even as regards warblers, I think that the nuptial coloration of certain species must have an advertising rather than a concealing value; and with some I should say that this would apply at other seasons also. The mourning warbler, the Kentucky warbler, the Maryland yellowthroat, the black-burnian, the black-throated green, the blue-winged yellow—I might almost indefinitely extend the list—are colored so that (at certain seasons, or at all seasons,) they attract the eye under normal conditions. The only reason that they do not attract the eye more is that their size and the leafy (cover) [coloring] in which they dwell offset the effect of their brilliant and highly non-protective (non-concealing) special coloration.

The utter breakdown of the theory as regards most big game I have elsewhere discussed. Giraffes, zebras, buffaloes, oryx, gnu, hartebeeste, owe nothing to concealing coloration; they have none. Moreover, where a number of different species utterly differently colored exist with equal success, two things are sure; first, that if one of them is protectively colored, the others are not; and second, that this protective coloration must be of very small consequence compared with other features in enabling the animal to thrive. If a chipmunk's stripes are concealing, then the uniform tint of a weasel or a red squirrel is not concealing; or vice versa. In fact, as regards a great multitude of mammals, large and small, I think there is need of far more thorough examination than has yet been made before we can say just how far counter-shading, for instance, is of real protective value. It is an interesting discovery about color; but its value in effecting concealment as regards many mammals, snakes, birds etc, is enormously exaggerated.

I look forward to seeing your museum. As you know, I have presented it an elephant.

Sincerely yours,

THEODORE ROOSEVELT.

Professor Charles A. Kofoid,
University of California,
Berkeley, Calif.

In Egypt, on the edge of the desert, there are sand chats which are protectively colored above and which try to escape notice by crouching; and there are black and white chats, whose coloration is advertising; they never try to escape notice, and are as conspicuous as if they were little crows.

Note.—This letter, dated February 2, 1911, was written in response to the receipt of an article by Mr. H. C. Tracy, then a graduate student in the Department of Zoology of the University of California, entitled "The Significance of the White Markings in Birds of the Order Passeriformes" (published in Univ. Calif. Publ. Zool., vol. 6, 1910, no. 13). Its chronological relations are so illuminating in the development and expression of Mr. Roosevelt's ideas on the significances of animal coloration that it seems fitting to publish the letter and establish its place in his contributions to this much discussed subject.

The letter is here reproduced as nearly as may be, as it was written. The original is typewritten, but corrected, interpolated and interlined, and nearly all the pages have extensive footnotes in the characteristic broad-lined, condensed chirography of the writer. The footnotes follow at once after their indicating asterisks in the reproduced letter while the interlineations and interpolations are in parentheses, and the crossed-

*This is true of thousands of [large] kinds of larger birds (like all the white egrets and glossy or dark ibises, pied storks, coots, water hens, etc.) as of brilliantly colored birds in the tropics.

The Outlook

287 Fourth Avenue
New York

Office of
Theodore Roosevelt

and the leafy ^{color} ~~coloring~~ in which they dwell offset the effect of their brilliant and highly non-protective, ^{non-concealing} special coloration.

The utter breakdown of the theory as regards most big game I have elsewhere discussed. Moreover, where a number of different species ^{of different colors, such as yellow, black, orange, green, and white, are all} utterly differently colored exist with equal success, two things are ^{by and by} sure; first, that if one of them ^{is} protectively colored, the others are not; and second, this protective coloration must be of very small consequence compared with other features in enabling the animal to thrive. If a chipmunk's stripes are concealing, then the uniform tint of a weasel or a red squirrel is not concealing; or vice versa. In fact, as regards a great multitude of mammals, large and small, I think there is need of far more thorough examination than has yet been made before we can say just

how far counter-shading, for instance, is of real protective value. ^{It is an interesting discovery about birds, but its value in affecting concealment as regards mammals is very small, and it is a very common mistake to} I look forward to seeing your museum. As you know, I have presented it an elephant.

Sincerely yours,

Theodore Roosevelt
In Egypt, on the edge of the desert, there are sand chats, which are protectively colored above and which try to escape notice by crowding; and there are black and white chats, whose coloration is advertising; they never try to escape notice, and act as conspicuous as if they were little crows.

Fig. 38. LAST PAGE OF THE ROOSEVELT LETTER, REPRODUCED FACSIMILE.

out words and phrases are put in square brackets. In a few instances the interpretation of the handwriting is most perplexing, but the reading has been made in the light of the context.

This letter followed shortly after the writing and publication of his "African Game Trails" (New York, Scribners, 1910) in which Appendix E is entitled "Protective Coloration". The appendices of the work are dated (p. 575) Khartoum, March 15, 1910.

This early discussion is, however, devoted almost wholly, insofar as his own contributions are concerned, to his recent observations on the mammals of Africa. His references to birds are few. He opens (p. 553) his criticisms of Mr. G. H. Thayer's "Concealing Coloration in the Animal Kingdom" in this appendix by admitting the value of the concealing coloration in "the night hawk, certain partridges and grouse, and numerous other birds", but vigorously attacks Thayer's idea as to the concealing value of the coloration of the blue jay. The "exceptional situations" and "misleading surroundings" in which the peacock and male wood-duck are portrayed in Thayer's

book lead Mr. Roosevelt to comment (p. 558) that "many of the markings of the mammals, just as is the case with birds, must be wholly independent of any benefit they give to their possessors in the way of concealment".

On page 566 he reverts to birds again as follows: "To say that white herons, and pelicans and roseate-colored flamingoes and spoon-bills are helped by their coloration, when other birds that live exactly in the same fashion and just as successfully, are black, or brown, or black and white, or gray, or green, or blue, certainly represents mere presumption, as yet unaccompanied by a vestige of proof, and probably represents error".

On this page he also attacks Thayer's sweeping conclusions as to the concealing effectiveness of nuptial colors and cites the cock bobolink and breeding cock tanager in refutation, and follows (p. 567) with a most vigorous defense of the advertising coloration of "multitudes of birds, of the red-winged blackbird, of the yellow-headed grackle, of the wood-duck, of the spruce grouse, of birds which could be mentioned off-hand by the hundred, and probably, after a little study, by the thousand". It is noteworthy that in this appendix Mr. Roosevelt refers wholly to birds occurring in America and not to any of his African ornithological experiences.

These references are continued, supplemented and expanded in the letter here published and form the core of his later contribution on the subject, namely, his article entitled "Revealing and Concealing Coloration in Birds and Mammals" (Bull. Amer. Mus. Natural History, New York, vol. 30, article 8). The author's edition bears the date of August 23, 1911. In an appendix to this article he replies to the criticisms of his "extraordinary tirade" by Mr. A. H. Thayer in the Popular Science Monthly for July, 1911. His comments on birds in his Bulletin article are included in the main in his discussion of the theme "Concealment due mainly to cover and habits" (pp. 134-160) which readers will find reminiscent of the letter here published. From these comparisons and from the chronology, it is evident that this letter was written during the time in which the observant and disputatious mind of this versatile naturalist was occupied with the elaboration of his Bulletin article. The capacity of this eminent statesman-naturalist for concentration of thought in the midst of the most diversified activities is strikingly illustrated by this letter and the Bulletin article, which were elaborated during associate editorship of the Outlook and the political turmoil of the incipient Presidential campaign of 1912.

CHARLES A. KOFOID.

University of California, Berkeley, February 26, 1924.

A LIST OF THE LAND BIRDS OF THE GRASS VALLEY DISTRICT, CALIFORNIA

By E. B. RICHARDS

NEVADA COUNTY is located in the north-central portion of California. It is a long, narrow county, seventy-five miles in length and from ten to twenty miles wide. The southwestern end of the county is about 600 feet above sea level, while at the eastern end are found elevations of from 8000 to 9000 feet. Grass Valley, the largest gold-mining town in the state, and Nevada City, the county seat, four miles distant, are located in the south-central part of the county. From vantage points near these towns one may watch the reflected sunset upon the rivers of the Sacramento Valley, then facing about, view the perpetual snows of the Sierra Nevada.

The Grass Valley district, as herein designated, has no sharply defined geographic boundaries, but the entire district may be confined within an imaginary circle of a ten-mile radius of which the city of Grass Valley is the center. It is in the Sierran foot-hills and is mostly in the Upper Sonoran life zone, passing into Transition on the east. Considering the settled condition of the district, the flora and fauna are fairly well represented, though of the birds, resident species are comparatively few.

Passing through the middle of the district, with a course nearly northwest and southeast, is a geological formation known as the "serpentine belt" along which the vegetation is much different from that of the balance of the district. Digger pine (*Pinus sabiniana*) seems to follow this particular rock formation, while the masses of brush upon some of the hill-sides are composed, mainly, of scrub oak (*Quercus dumosa*), manzanita and much wedge-leaved ceanothus (*C. cuneatus*). East of this belt black oak and yellow pine are abundant species, and in some localities Douglas spruce (*Pseudotsuga taxifolia*) and fir (*Abies concolor*) are plentiful. Sugar pine is also found in the mountains. Excepting in the more mountainous parts of the district, the coniferous forests are composed, mostly, of second-growth timber. Mention should be made of the deer-brush and hazel as two of the several plants taking the place of the primitive forest. West of the serpentine belt white oak is prevalent, and small groves of black oak, yellow pine and some species of live oak are found in suitable localities. Many of the rocky, uncultivated hill-sides are covered with manzanita and ceanothus. In some of the numerous canyons and ravines of the district are heavy growths of white alder (*Alnus rhombifolia*), dogwood (*Cornus nuttalli*), and madroña (*Arbutus menziesii*).

While the above outline indicates an abundant native vegetation, it must be borne in mind that a big part of the district is under cultivation, fruit growing being one of the principal industries. As many of the large orchards are young they afford little in the way of food or protection to bird life. In the many little valleys are the "oozy pastures" and meadow-brooks so dear to the blackbirds and meadowlarks; but there are no natural lakes and only a few small storage reservoirs, so we see little of the water birds.

The following list of 114 species and subspecies of land birds is the result of many years of observation by the writer, but it is not offered as a complete catalogue of the district; only birds that could be positively identified are listed.

I wish to acknowledge valuable assistance from Mr. Harry S. Swarth, of the California Museum of Vertebrate Zoology, in identifying specimens. I am also indebted to Mr. E. O. E. Klippahn of Grass Valley for help in classifying the flora of the Grass Valley district.

Oreortyx picta plumifera. Mountain Quail. Fairly common resident of the northeastern part of the district. Some years numerous as a fall migrant.

Lophortyx californica vallicola. Valley Quail. Common resident, particularly among the lower foothills. A few winter in the central part of the district.

Dendragapus obscurus sierrae. Sierra Grouse. The early settlers say that this grouse was numerous in former days in this part of the county. It is still reported from the more wooded sections of the district at rare intervals.

Columba fasciata fasciata. Band-tailed Pigeon. Irregular winter visitant, particularly to the southern part of the Grass Valley district; also to the oak groves in the Bear River country.

Zenaidura macroura marginella. Western Mourning Dove. Common summer visitant; breeds in considerable numbers on the ranches among the lower foothills. Occurs in small numbers east of the serpentine belt.

Cathartes aura septentrionalis. Turkey Vulture. Common summer visitant. Most numerous in the western part of the district.

Accipiter velox. Sharp-shinned Hawk. Common winter visitant. I have the skin of one shot while feeding from the remains of a freshly killed Valley Quail. Another was taken while trying to capture a Valley Quail in the brush.

Astur atricapillus striatulus. Western Goshawk. Rare winter visitant. I have seen but two of the species in this district. One was shot while feeding upon a chicken it had killed, and the other had been shot by hunters and left hanging on a barbed-wire fence.

Buteo borealis calurus. Western Red-tailed Hawk. Common resident, nesting in the oaks and second-growth pines. It is considered the most troublesome of our birds of prey.

Aquila chrysaetos. Golden Eagle. Casual visitant to certain parts of the district, particularly to Pleasant Valley and other localities in the western section of the county.

Falco columbarius columbarius. Northern Pigeon Hawk. Winter visitant in limited numbers. I have seen only two in this locality.

Falco sparverius sparverius. American Sparrow Hawk. Found breeding in limited numbers. Fairly common in winter.

Aluco pratincola. American Barn Owl. Fairly common resident. Specimens are occasionally taken in the district, mostly south of Grass Valley.

Otus asio quercinus. Southern California Screech Owl. Fairly common resident. This species was more numerous in former years.

Bubo virginianus pacificus. Pacific Horned Owl. Noted sparingly as a resident in wooded localities. Years ago, before the big timber had been cut out, this owl was quite plentiful.

Glaucidium gnoma californicum. California Pigmy Owl. Rather rare winter visitant. Has been found in shade trees within the city limits.

Geococcyx californianus. Road-runner. Resident in limited numbers in the southern part of the Grass Valley district.

Ceryle alcyon caurina. Western Belted Kingfisher. Occasionally seen during fall and winter along the larger streams.

Dryobates villosus hyloscopus. Cabanis Woodpecker. Fairly common resident. Nests in the coniferous groves, particularly in the second-growth pines.

Dryobates pubescens turati. Willow Woodpecker. Common summer visitant. Nests in the willows along the meadow streams and in old orchards. Occasionally met with in winter.

Dryobates nuttalli. Nuttall Woodpecker. Common resident in the White Oak groves west of the serpentine belt. Occasional visitant to the coniferous forests.

Xenopicus albolarvatus albolarvatus. Northern White-headed Woodpecker. Irregular winter visitant. During the winter of 1901-02 hundreds of this species visited Nevada County.

Sphyrapicus varius daggetti. Sierra Red-breasted Sapsucker. Fairly common winter visitant. Rarely seen in summer. No evidence of breeding.

Sphyrapicus thyroideus. Williamson Sapsucker. Occurs sparingly as a winter visitant. Only females noted.

Phloeotomus pileatus picinus. Western Pileated Woodpecker. Fairly common in winter in the more mountainous parts of the district. Rarely seen as far down in the hills as the white oaks.

Melanerpes formicivorus bairdi. California Woodpecker. Abundant resident locally. Sparingly present above the white oaks.

Asyndesmus lewisi. Lewis Woodpecker. Irregular winter visitant. Some years quite numerous among the oaks.

Colaptes cafer collaris. Red-shafted Flicker. Fairly common resident. Nests in old stumps and orchards, and sometimes bores into houses.

Phalaenoptilus nuttalli californicus. Dusky Poor-will. Rare. I have noted but one bird, which was taken at dusk October 9, 1922.

Chordeiles, species? Nighthawk. Fairly common summer visitant. Some years quite numerous in late summer.

Archilochus alexandri. Black-chinned Hummingbird. Summer visitant in small numbers. It is probable that this hummingbird has always been with us as a summer visitant, though I have failed to note it before the last few years.

Calypte anna. Anna Hummingbird. Common summer visitant. Some years, during spring and early summer, the species appears abundantly, many passing on to more northern breeding ranges.

Selasphorus rufus. Rufous Hummingbird. Noted only as a spring migrant. Specimens taken early in April.

Stellula calliope. Calliope Hummingbird. Occasionally seen as a spring migrant. A female taken April 14, 1918, from a number of Anna Hummingbirds among the flowering manzanita.

Tyrannus verticalis. Western Kingbird. Fairly common summer visitant. Apparently less numerous during the last few seasons.

Myiarchus cinerascens cinerascens. Ash-throated Flycatcher. Regular summer visitant, though never plentiful.

Sayornis nigricans. Black Phoebe. Fairly common during fall and winter months. Rarely seen in summer.

Nuttallornis borealis. Olive-sided Flycatcher. Regular summer visitant, but never common.

Myiochanes richardsoni richardsoni. Western Wood Pewee. Common summer visitant. Probably breeds more abundantly than any other flycatcher.

Empidonax difficilis difficilis. Western Flycatcher. Common summer visitant, breeding quite abundantly in suitable localities.

Empidonax hammondi. Hammond Flycatcher. Fairly common spring migrant, though some years it is rarely seen.

Empidonax griseus. Gray Flycatcher. Very rare. In fact, I have but one authentic record: a male taken May 13, 1917, was identified by Mr. Swarth as of this species.

Pica nuttalli. Yellow-billed Magpie. Fairly common resident in the lower valleys of the district. Rarely found above Penn Valley.

Cyanocitta stelleri frontalis. Blue-fronted Jay. Fairly common winter visitant. Often abundant during fall migration. Many spend the winter in the oak groves west of Grass Valley.

Aphelocoma californica californica. California Jay. Common resident, breeding generally throughout the district, but seemingly congregating for the winter in favorable localities.

Corvus brachyrhynchos hesperis. Western Crow. Common in some of the lower valleys of the district, while small flocks occasionally come as far up as the serpentine belt.

Cyanocephalus cyanocephalus. Pinyon Jay. A large flock arrived here about the first of December, 1914. It soon became divided into three or four flocks, which were much in evidence till about the first of April, 1915, when the birds began to leave. My last record is May 25. That was the only time that I have known the Pinyon Jay to visit this part of the county.

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. A straggler is occasionally seen here in summer with the Brewer Blackbirds and Red-wings in the tules.

Agelaius phoeniceus californicus. Bi-colored Red-winged Blackbird. Common summer visitant. A few seen during winter.

Sturnella neglecta. Western Meadowlark. Common resident, nesting in the meadows and grain fields.

Icterus bullocki. Bullock Oriole. Fairly common summer visitant; nesting in the black oaks and often in the shade trees within the city limits. Arrives about April 15.

Euphagus cyanocephalus. Brewer Blackbird. Common resident. In winter large flocks are often seen flying from one rendezvous to another.

Hesperiphona vespertina montana. Western Evening Grosbeak. Irregular winter visitant. Comes in small flocks and seems to prefer the second-growth yellow pines.

Carpodacus purpureus californicus. California Purple Finch. Fairly common winter visitant, usually in small flocks. A few are seen in summer, and may be breeding in the upper sections of the district.

Carpodacus cassinii. Cassin Purple Finch. Occurs sparingly as a winter visitant. Seen only in small flocks, and seldom seen in the open ground.

Carpodacus mexicanus frontalis. California Linnet. Abundant resident, though during the winter months they are much less plentiful than at other times, and often disappear during severe weather.

Loxia curvirostra bendirei. Sierra Crossbill. Irregular winter visitant, usually in small flocks. During the winter of 1914-15, however, this species occurred here in great numbers, hundreds congregating in the second-growth yellow pine groves to feed from the pine cones.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. Common summer visitant. Often seen during mild winters.

Spinus pinus pinus. Pine Siskin. Irregular winter visitant in small flocks. Found along the ravines and creeks feeding on the early buds of the white alder.

Passer domesticus. English Sparrow. An abundant resident, apparently increasing in numbers.

Chondestes grammacus strigatus. Western Lark Sparrow. Common summer visitant, some years nesting abundantly. Occasionally seen during mild winters.

Zonotrichia leucophrys leucophrys. Intermediate Sparrow. Winter visitant in small numbers. More numerous as a fall migrant.

Zonotrichia coronata. Golden-crowned Sparrow. Common winter visitant. This is probably our commonest winter sparrow, haunting the deer-brush and scrub oak in considerable numbers.

Spizella passerina arizonae. Western Chipping Sparrow. Common summer visitant. Never seen in winter.

Junco oreganus shufeldti. Intermediate Junco. Seemingly fairly common as a winter visitant. Skins examined by H. S. Swarth were pronounced *shufeldti*, which subspecies appears to be of rather uncertain status in this state.

Junco oreganus thurberi. Sierra Junco. This subspecies occurs as a winter visitant. It is seen in flocks with other juncos, probably *shufeldti*. We have a breeding junco yet to be classified.

Melospiza melodia merrilli. Merrill Song Sparrow. Winter visitant. Never common, though occasionally appearing in fairly large numbers as a fall migrant.

Passerella iliaca sinuosa. Valdez Fox Sparrow. One specimen collected at Grass Valley, October 21, 1917.

Passerella iliaca mariposae. Yosemite Fox Sparrow. Fairly common summer visitant, nesting in the ceanothus thickets.

Pipilo maculatus megalonyx. Spurred Towhee. Common resident. Breeds abundantly on the brushy hillsides and in the ravines.

Pipilo crissalis carolae. Northern Brown Towhee. One of our few resident birds, abounding in all brushy localities.

Zamelodia melanocephala capitalis. Pacific Black-headed Grosbeak. Common summer visitant. One of the latest arrivals and one of the first to leave.

Passerina amoena. Lazuli Bunting. Common summer visitant. Some years abundant. Found nesting in the chaparral thickets and in small pines and willows.

Piranga ludoviciana. Western Tanager. Fairly common summer visitant. Usually found in second-growth yellow pine groves.

Progne subis hesperia. Western Martin. A few years ago this bird was a fairly common summer visitant, nesting in the oaks and under the eaves in the business part of the town. During the last five or six years it has become irregular, and of decreasing numbers. The ever increasing colony of English Sparrows may be responsible for its desertion.

Petrochelidon lunifrons lunifrons. Cliff Swallow. Common summer visitant, nesting around mines and farm buildings. It arrives about the middle of April.

Hirundo erythrogaster. Barn Swallow. Common summer visitant, nesting in deserted mine shafts and buildings. For three succeeding years my first date of arrival was April 10.

Bombycilla garrula. Bohemian Waxwing. I know of but one occurrence of this species. In February, 1911, a flock of about one hundred appeared in the orchards east of Grass Valley. It soon separated into a number of small flocks which were much in evidence till well along in April, when they finally disappeared. Most of the time they were in the apple orchards, where they fed on the dried fruit still on the trees, though I found them feeding in the pine trees, as well. They attracted much attention.

Bombycilla cedrorum. Cedar Waxwing. Common but irregular fall and winter visitant. Recorded as early as September 25. Also recorded as a late spring visitant; a small flock seen and specimens taken as late as June 3.

Vireosylva gilva swainsoni. Western Warbling Vireo. Common summer visitant. Found in the white alders and dogwoods along the creeks, and sometimes on the brushy hill-sides.

Lanivireo solitarius cassini. Cassin Vireo. Seen only in late summer. A male taken September 2, 1917, and a female taken September 6, 1917, were probably migrants.

Vireo huttoni huttoni. Hutton Vireo. Common summer visitant. Generally found in the pine forests. Also found nesting in the deer-brush thickets.

Vermivora ruficapilla gutturalis. Calaveras Warbler. Occurs only as a migrant; generally seen during May, sometimes late in April.

Vermivora celata lutescens. Lutescent Warbler. Fairly common summer visitant. Numerous as a migrant.

Dendroica aestiva brewsteri. California Yellow Warbler. Common summer visitant. Most numerous of our warblers, nesting in the gardens, orchards and chaparral.

Dendroica coronata hooveri. Alaska Myrtle Warbler. Noted sparingly as a spring migrant. In April, 1918, this species appeared in unusual numbers.

Dendroica auduboni auduboni. Audubon Warbler. Common as a spring migrant, a few staying through the summer to breed. It is also common as a winter visitant.

Dendroica nigrescens. Black-throated Gray Warbler. Fairly common summer visitant. During the summer of 1911 this species was very numerous in this region, evincing a preference for the coniferous groves.

Dendroica townsendi. Townsend Warbler. Noted as a rare migrant. One young male taken in a grove of pines on September 8, 1918.

Oporornis tolmiei. Tolmie Warbler. Rare summer visitant. No nests found, but probably breeding here.

Icteria virens longicauda. Long-tailed Chat. Fairly common summer visitant, breeding along the ravines and creeks. In some localities found nesting in dense thickets of deer-brush.

Wilsonia pusilla chryseola. Golden Pileolated Warbler. Rare summer visitant. Some years fairly common as a migrant.

Anthus rubescens. American Pipit. Fairly common, though irregular, winter visitant; some years appearing in large flocks.

Cinclus mexicanus unicolor. American Dipper. Fairly common resident along the ravines and creeks. In May, 1917, I found a pair nesting under a mine hoist and close to the high-power water wheels, where they had to pass through streams of water from the wheels.

Toxostoma redivivum sonomae. Sonoma Thrasher. Fairly common resident. Generally found along the rocky serpentine belt, where scrub oak, manzanita and ceanothus occur in dense thickets.

Thryomanes bewicki drymoeus. Sacramento Bewick Wren. Fairly common resident. Found nesting on the brushy hill-sides, and often in curious places. I found a pair nesting in the lining of an old coat, which was hanging from a stump.

Troglodytes aedon parkmani. Western House Wren. Occurs sparingly as a summer visitant. Found around deserted mine buildings.

Nannus hiemalis pacificus. Western Winter Wren. Regular winter visitant, though never common. More numerous than usual during the winter of 1918-19.

Certhia familiaris zelotes. Sierra Creeper. Occurs regularly in small numbers as a winter visitant. Generally found in the pine and cedar groves with the nuthatches.

Sitta carolinensis aculeata. Slender-billed Nuthatch. Regular winter visitant in small numbers. Casual in summer, but not found breeding.

Sitta canadensis. Red-breasted Nuthatch. Irregular winter visitant. Some seasons appears in considerable numbers.

Baeolophus inornatus inornatus. Plain Titmouse. Fairly common resident, particularly below the serpentine belt.

Penthestes gambeli. Mountain Chickadee. Occurs regularly, though sparingly, as a winter visitant.

Psaltriparus minimus californicus. California Bush-tit. Noted sparingly in summer; no nests found. Often numerous during fall and winter months.

Chamaea fasciata henshawi. Pallid Wren-tit. Common resident. Breeds on the brushy hill-sides, mainly where scrub oak and manzanita abound.

Regulus satrapa olivaceus. Western Golden-crowned Kinglet. Fairly common as a winter visitant. During the winter of 1916-17 this species was quite numerous.

Regulus calendula cineraceus. Western Ruby-crowned Kinglet. Regular winter visitant, but never abundant.

Poliophtila caerulea obscura. Western Gnatcatcher. Noted casually as a summer visitant. Sometimes in small flocks as a migrant.

Myadestes townsendi. Townsend Solitaire. Occurs sparingly as a winter visitant, usually in mid-winter or early spring.

Hylocichla ustulata ustulata. Russet-backed Thrush. Fairly common summer visitant in suitable localities. Ten years ago this thrush was rarely seen here, but it has steadily increased in numbers.

Hylocichla guttata guttata. Alaska Hermit Thrush. Common winter visitant, haunting the tangles of manzanita and ceanothus on the hillsides, particularly along the serpentine belt.

Hylocichla guttata nanus. Dwarf Hermit Thrush. Of several hermit thrush skins examined by Mr. H. S. Swarth, two were found to be *H. g. nanus*, though one was pronounced "not quite typical of that subspecies."

Planesticus migratorius propinquus. Western Robin. Fairly common as a breeding species. Usually common in winter; some winters abundant.

Ixoreus naevius naevius. Varied Thrush. Sparing as a winter visitant. During the winter of 1900-01, however, this thrush occurred here in large flocks.

Sialia mexicana occidentalis. Western Bluebird. Fairly common resident locally. This bird is most in evidence during the winter months, but does not appear to be so numerous as in former years.

Grass Valley, California, January 22, 1924.

FROM FIELD AND STUDY

The White-necked Raven Nesting in Eastern Colorado.—Reports of early observers are unanimous in regard to the great number of White-necked Ravens (*Corvus cryptoleucus*) once found in the foothills and plains regions of eastern Colorado, where they are now of rare occurrence. Finding a nest on July 28 of this year containing well-grown young, is therefore of interest, but not less so, the unusual site the birds selected.

Standing not more than one hundred yards from the well-travelled highway, about eighteen miles south of Hugo, Washington County, Colorado, is the framework of an old windmill tower. When passing the spot on the above date, a pair of ravens was observed at rest on the small platform near the top of the eighteen foot structure.

As the region is a slightly rolling, treeless prairie, devoted largely to agriculture, serious thought that the old tower might be a nesting site of the ravens was not entertained, especially as it was close to a public road and situated in a field of growing corn; but, finding the birds present some hours later, a closer scrutiny was undertaken. This revealed a compact nest composed of weed stalks placed within the square formed by the corner timbers, its top being level with the platform.

An examination of the three young, then two-thirds grown, revealed the white of the basal portions of the throat feathers and thus identified the birds as the now rare White-necked Raven.—ROBERT J. NIEDRACH, *Colorado Museum of Natural History, Denver, October 24, 1923.*

An Additional Note on the "Following" Habit in Hawks.—Mr. Leopold's note on the "following" habit in hawks in THE CONDOR, volume 25, page 180, brings to mind experiences I had with Pigeon Hawks (*Tinnunculus columbarius*) in the Magdalen Islands, Gulf of St. Lawrence, Canada. During the summers of 1906, 1907 and 1908, I frequently walked the shores of Grindstone Island where we had our headquarters. Often one of these little falcons would follow me along the beach, directly over my head, at a height of perhaps twenty feet or, more often, a few yards behind me, all the while uttering its shrill, chattering call. I was too far from the bush to be disturbing any nesting birds, and I was on the open beach where shorebirds should have been obvious enough without disturbing them, to attract any predatory bird.

Many predacious birds, mammals, and, I think, fishes have definite limits to their hunting areas, within which the intrusion of others is variously resented, or not resented, according to the pugnacity of the species or individual. I doubt that any following is done in anticipation of prey being frightened into visible motion.

Digressing slightly from the main theme, there is one "follower", at any rate in the East, that goes out for "game". If you are collecting birds' eggs, our Red Fox will unquestionably follow along and clean up the short sets you are waiting for, should you go too near, and the result shall be "nihil ex ovo".—W. SPRAGUE BROOKS, *Boston Society of Natural History, Boston, October 25, 1923.*

Notes from Eureka, California.—Yakutat Song Sparrow (*Melospiza melodia caurina*). A male taken on December 27, 1919, in town, was by itself and easily approached. Another male was taken on the ocean beach, across the bay from town, on March 27, 1921. It was flushed from under a log, and the way this bird got over, or under, drift logs was surprising.

Pileolated Warbler (*Wilsonia pusilla pileolata*). A male was taken on November 24, 1918, in a brush lot in town; it had been first seen on November 20.

Black-throated Gray Warbler (*Dendroica nigrescens*). A male taken on January 1, 1920, in a small spruce grove, just out of town limits; seen also the day before.

Oregon Chickadee (*Penthestes atricapillus occidentalis*). A male was taken on March 31, 1920, in a brushy gulch in town limits. First seen March 26, with a small flock of Chestnut-backed Chickadees. For six afternoons this little flock of Chickadees would be in a certain willow around five o'clock.

Specimens of the above birds were kindly identified for me by Mr. Harry S. Swarth.—JOHN M. DAVIS, *Eureka, California, December 14, 1923.*

English Sparrow at Buena Park, Orange County, California.—The first English Sparrow (*Passer domesticus*) I ever saw was a male bird, perched on the telegraph wires near the Southern Pacific depot at Buena Park, on April 15, 1912. I was away

a great deal of the time for the next six years and did not observe any more here until April 17, 1918, when a pair was seen. In the spring of 1919 a colony established itself, using some large date palms on Grand Avenue for nesting sites.

Since then they have increased and spread all over the village and out into the surrounding country, until at the present time on my rural mail route covering an area roughly four miles one way by two miles the other, there are six well established colonies, besides the numerous flocks in the village. They seem to require palms for roosting and nesting sites. Every colony I know of is established where either the date palm or the Washingtonia palm is growing, using the mass of dead fronds about the trunk of the latter as their shelter. At my home we have no palms, but have a number of large eucalyptus trees that would apparently afford ample nesting sites. The nearest colony is less than one half mile away; and during the winter and spring for the last four years, pairs and small flocks have been frequent visitors to our premises; but as yet they have not nested, nor remained very long at a time.

In Honolulu during 1914-15 they were very common. But I did not notice any decided preference for palms amid the luxuriant tropical gardens of the residence sections. In San Francisco I found them abundant where there were no palms or any other shelter than the cornices of buildings; and in the Taft district of Kern County they lacked palms and seemed to content themselves with the few trees found around some of the oil company camps.

Is the apparent preference for palms a local development, or, given the choice of various shelters, will *Passer domesticus* take palms first?—JOHN MCB. ROBERTSON, Buena Park, California, November 4, 1923.

The Black-bellied Plover at Buena Vista Lake.—While at Buena Vista Lake, Kern County, California, in the company of Mr. A. J. van Rossem, I took a male Black-bellied Plover (*Squatarola squatarola*). The bird was captured April 15, 1923, and is in nearly full spring plumage. The specimen was one of hundreds of sick migratory shore birds that were dying from some unknown condition of the lake water. This individual could not have been abnormally detained at the lake for many days, since the disease seemed to attack and kill the birds rather quickly. Although during our stay much of the lake shore was explored, no other individual of this species was seen.

This bird, as far as I know, is the first Black-bellied Plover taken at the lake, and adds to the other interior records of birds taken farther north in the San Joaquin Valley.—ALDEN H. MILLER, Los Angeles, California, November 29, 1923.

Developmental Color Changes in the Eyes of New Zealand Gulls.—As every mother knows, the color of her infant's eyes undergoes changes, more or less marked, during the first year or two after birth. But these alterations are negligible when compared with the color variations observable in the irides of some young birds. For example, the pretty and often quite tame little Red-billed Gull (in New Zealand the Mackerel Gull), *Larus scopulinus*, is born with a dark brown, almost black, eye, and yet by the time the immature bird is a year old the iris has changed to nearly pure white. A similar alteration is noticeable in the eyes of the much larger but equally beautiful Southern Black-backed Gull (*Larus dominicanus*) that ranges over the whole Southern Hemisphere. Both these birds are easily domesticated and act the part of scavengers and devourers of caterpillars and other insect pests. I have often seen them about the Australasian harbors and fields going about their useful work unafraid of man.—CASEY A. WOOD, Museum of Vertebrate Zoology, Berkeley, California, December 15, 1923.

References to Feeding Habits of Certain Birds.—It is believed the following references will be usefully put on record here. Though they appear in an ichthyological journal they are of direct interest to ornithologists.

Copeia, No. 21, p. 27, "On Fish-bones in a Kingfisher's Nest." The note does not give the specific identity of the bird but it unquestionably refers to the Belted Kingfisher (*Ceryle alcyon*), since that is the only kingfisher known to occur in the region where the observation was made.

Copeia, No. 26, p. 2, "Fish as Owl Food." Notes the Great Horned Owl (*Bubo virginianus*) feeding on the Yellow Perch.

Copeia, No. 30, p. 31, "Louisiana Water-thrush eating Fish." *Seiurus motacilla* observed catching small fish and picking the flesh.—F. N. BASSETT, Alameda, California, January 11, 1924.

An Improved Bird-skin for Class Use.—Those who have taught ornithology, either as a part of general science courses in the public schools, or more formally in university classes in zoology, are likely to have been impressed by the better results obtained when students are permitted to *actually handle* specimens. More or less distant observation merely of mounted birds, on fixed perches, does not bring so easily an acquaintance with the diagnostic characters of species as comes with the more intimate examination of specimens "in the hand."

At the same time, the instructor is often disturbed by the disastrous results of handling, on the part of inexperienced persons, of the usual type of study skin. Smooth, well-made skins quickly become ruffled; white plumages become finger-soiled; and wings, legs, and heads get broken off.

Receipt at the Museum of Vertebrate Zoology of some foreign-made bird skins, "on sticks," suggested to me that here was a way of insuring a more substantial style of study skin than I had heretofore used in class work. Following up the idea, when I was on a field trip last summer I took occasion to develop the "stick method" of making bird skins, with results now described, and illustrated in the accompanying figure.

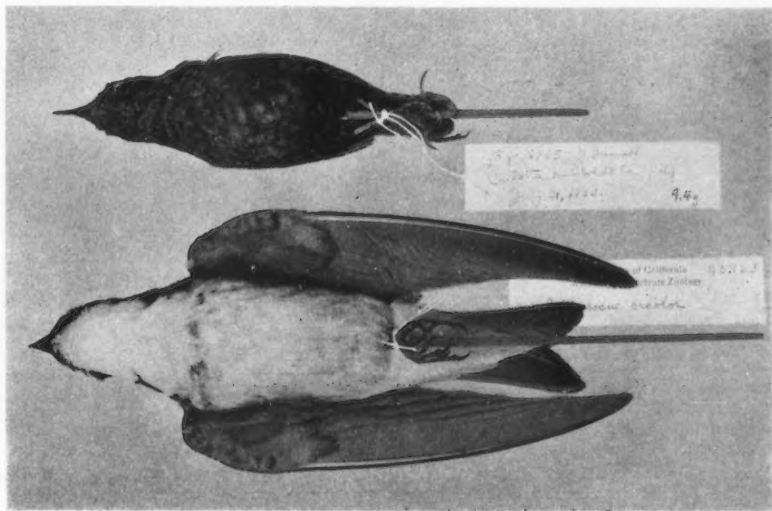


Fig. 39. ILLUSTRATING THE "STICK METHOD" OF MAKING STUDY SKINS OF BIRDS.

The sticks used were split from a section of bamboo which I got at a Japanese florist's shop. The length of the stick for any particular bird need not be determined at an early stage in proceedings; but it should be cut decidedly longer than seemingly necessary, and be shortened to the appropriate length after the skin is stuffed. Very slender bamboo slivers are light and still very stiff and strong. Very good substitutes for bamboo, at least for small birds, are the neatly rounded wooden "applicators," purchasable cheaply at a druggist's.

Most study skins of the conventional type have the wings folded close against the sides, thus obscuring the wing structure, and also concealing special markings which are often present and which may be important in field identification. Therefore, some or most of the specimens put up for class use should be prepared with wings out at the sides, though not necessarily fully spread. To hold the wings securely from being broken off, I tied the two humeri together inside the skin across the back with thread.

For the stuffing, I prepared two soft wads of cotton, of size appropriate to the specimen in hand. With the skin on the back I placed one wad in the body cavity on top of the tied humeri; then I wrapped with cotton one end of the bamboo sliver to a diameter to fill out the neck, and inserted it through the neck between the lower jaws and firmly into the mouth, the mandibles having been previously tied shut by a thread sewn through the nostrils.

Then I placed the second cotton wad on top of the body stick, and, after the usual adjustments, sewed up the ventral incision completely, in such a way that the stick protruded backwards in a perfectly symmetrical median position, its exit from the body being about at the vent. The legs were then crossed on top of the stick (as the bird lay on its back), and the thread tied tightly around both the legs and the stick simultaneously. This thread was, by the way, that attached to the permanent label bearing the full data.

The length of the stick, backward beyond the tips of the tail and wing quills, was determined on the basis of its employment as a handle—not too long and not too short. The bird, if with wings spread, was then put in position on a drying board, without wrapping, symmetry being assured by much smoothing and by the use of pins. In the case of a specimen with the wings folded against the sides, I wrapped the bird in split wadding, just as I usually do with the ordinary style of study skin.

After thorough drying, I find specimens prepared as above to be exceedingly firm, promising much longer "life" and especially much greater ease of handling than with the usual type of skin. The stick enables one to twirl the bird, without touching any of the feathers, so as quickly to see any of the superficial characters looked for.

The trouble involved in making this improved type of study skin is very little more than that ordinarily expended. To put up one small bird took me thirty minutes; and I am sure that with practise I could better this rate of output. I am so positive of the advantages of the stick method that I am having a collection of common species prepared in this way for university class use. Since, I am told, this type has been common in European collections for a great many years, I have no doubt that experience there has shown its value. Even for purely research purposes I believe skins "on sticks" are superior. There would be fewer dilapidated specimens in museums if this method had been more commonly in vogue in the past.—J. GRINNELL, *Museum of Vertebrate Zoology, University of California, Berkeley, September 27, 1923.*

The Sabine Gull in Oregon and on the Lower Yukon.—On September 4, 1904, while I was collecting material for the Oregon Agricultural College, a small dark-headed gull was noticed perched well out in Yakima Bay, upon some almost submerged sea drift. It was collected, when it proved to be a Sabine Gull (*Xema sabini*). This specimen is now no. 196, in the O. A. C. Museum collection.

Four years later, this attractive little gull was again met with, this time in its summer home on the lower Yukon River, Alaska. Here, and well out into Bering Sea, its appearance was striking, even to the casual observer, on account of its dark head and black markings on the tips of the outstretched wings.

At St. Michael, Alaska, two specimens were taken, which are now in the Museum of the State College of Washington, with the following data: Adult male, July 30, 1908; juvenal female, August 4, 1908; both collected by Wenrich and Shaw. —WILLIAM T. SHAW, *Pullman, Washington, January 22, 1924.*

Destruction of Inland Nesting Waterfowl.—Dr. H. C. Bryant, in an interesting paper on "fallacies in game protection," read recently before the Northern Division of the Cooper Club, stated that the "proper kind of protection could only be determined upon and given after the publication of adequate information bearing on the subject." I, therefore, desire to record a few experiences that I have had concerning the killing of birds and the destruction of their nests by predatory animals.

In May, 1906, I spent some time in South Assiniboia, Canada, now Saskatchewan, at a point north of Walsh, known as Many Island Lake. On the mainland of this lake I found many ducks' nests destroyed and the eggs broken and contents eaten by some animal whose tracks resembled those of the coyote. Every nest found on the mainland had been destroyed, while those on the islands a few hundred feet from the shore were unmolested. From the large number of nesting birds on these

islands, it was evident that some of the wiser birds had learned, by experience, that they were safer when separated from the mainland, even if by only a few hundred feet of shallow water.

A few days later, I visited Crane Lake, a little farther east, in Assiniboia, and while investigating a large colony of Western Grebe there, I was amazed by the large number of dead Grebes on nests or floating on the water near nests. The males were swimming about and diving near the nests but the females were nearly all dead. The water at this point was about 30 feet deep and the nests were the usual floating platforms placed among rather thin growths of tules. The area covered by the tules comprised probably five acres or more. The nests all contained from three to five eggs. In making a trip through this area and back, I counted not less than 200 dead birds, and the destruction seemed to extend throughout the colony. The birds had recently been killed, and upon investigation I found each bird had two or more small blood patches on the under part of the neck; otherwise the plumage and flesh were undisturbed. My conclusion was that each bird had been killed while on the nest by a mink or some such animal. This place was, at that time, far from any habitation.

Another incident within my observation, was in Lassen County, California, in May, 1919. I was walking over a piece of land recently drained, where high water had flooded an area of sagebrush. In this sagebrush there had been a colony of Red-winged Blackbirds. I found the eggs in each case broken and the nests partly pulled away from their fastenings. After finding one or two nests in this condition, I observed the tracks of a coyote in the soft mud and by following the coyote tracks, I was led to at least a dozen other nests similarly destroyed.

These depredations, no doubt, go on continually and have been going on for generations; but they point to at least one important cause of bird destruction.

I have been informed by friends who have visited the lakes above referred to, in recent years, that settlers and agriculture have encroached upon these bird breeding grounds to such an extent that the places have been almost deserted by the birds. This would indicate either a great depletion in their number or a very much more congested breeding ground elsewhere.

In further reference to this subject and the apparent lack of data regarding the actual game bird census, I would suggest that some effort be made to secure from each person obtaining a hunting license, a statement as to the number and kind of birds taken the previous year. The duck shooting grounds in California are nearly all covered by private game preserves, and I do not believe it would be difficult for the owners of these preserves to keep a record and return to the proper authorities a statement at the end of each year giving the number of birds killed each day and the numbers for each species. Tabulation of these figures for a few years should be a valuable guide as to the proper bag limit, and would also furnish information regarding migration.—JULES LABARTHE, *San Francisco, January 26, 1924.*

Mid-winter Occurrence of Black-crowned Night Heron Near Gridley, California.

—On January 13, 1924, I spent most of the day with Mr. Gerald J. Chalmers, whose ranch is riparian to the west side of the Feather River about due east of Manzanita, in Butte County, California, trying to find a flock of Wood Ducks, which he had seen near his ranch several days before. A half-mile or so north of the Chalmers ranch and about 3½ miles southeast of Gridley, there is an irregularly shaped pond, covering two or three acres, with a subterranean connection with the Feather River. The water level of this pond corresponds with that in the river. Part of its shore is leveed and all of it covered with a thick growth of trees and brush.

We approached this pond from the north in the late forenoon, making as little noise as possible, in the hope of getting a look at Wood Ducks. We went along the west side of the pond and around to the south side, whence we saw a pair of birds at the opposite (north) side, which turned out to be Coots and not Wood Ducks. We then stepped out onto the bank and flushed a Black-crowned Night Heron (*Nycticorax n. naevius*), which rose from the water on the north side of the pond and perched in a tree about 25 feet from the water and perhaps 125 to 150 feet from us. I watched this bird carefully for several minutes, with and without field glasses. It then flew to another tree about the same distance away. While perching it faced us and was quite stationary, with the bill turned down and to one side. The size of the bird, its

generally gray coloration and dark back and crown (dark gray or blackish but not black), its pointed, dark bill, yellow legs, white forehead, throat and under parts, and its rather short neck, satisfied me beyond any doubt as to its identity. The flight was slow and labored, as one would expect in a heron.

From such literature as I have been able to consult this appears to be an extension northwardly of the reported mid-winter occurrence of this species in California.—CLAUDE GIGNOUX, *Berkeley, California, January 28, 1924.*

Notes on Certain Horned Larks in California.—*Otocoris alpestris insularis*: The Island Horned Lark may not be such a casual visitor to the mainland of California as the present single record from the coast of Los Angeles County would indicate (Pac. Coast Avif., no. 11, 1915, p. 96). There are two specimens of this form in the Dickey collection, a male (no. CX 45), taken at Goleta, Santa Barbara County, November 26, 1915, and another male (no. K 534), taken on the sand dunes near Oxnard, Ventura County, August 22, 1922. The possibility of these birds being extreme examples of *Otocoris alpestris actia* has been considered, but they match island specimens of *Otocoris alpestris insularis* so perfectly as to convince the writers that they may safely be referred to that form. In both instances the birds were taken on the sand dunes, just back of the beach. It would be interesting to determine whether the form ever wanders inland, or whether it is confined to the littoral association. On the Santa Barbara Islands, the race is found almost exclusively on upland pasture lands. One would expect the birds to seek a similar habitat on the mainland during their fall and winter wanderings, but present evidence seems to negate this expectation.

Otocoris alpestris merrilli: A male horned lark (no. J 1831), taken at Buena Vista Lake, Kern County, December 31, 1921, is apparently of this race. It is perfectly matched by two birds from western Idaho, and is therefore quite distinct from *Otocoris alpestris sierrae*, examples of which were at one time referred to *Otocoris alpestris merrilli*. There is no topographic barrier to prevent *merrilli* from coming south to Buena Vista Lake through the great interior valley of California. Dr. Grinnell has recently found the race in abundance in the Sacramento Valley (CONDOR, xxv, 1923, p. 172). It will therefore probably be found to winter regularly south to the southern extremity of the San Joaquin Valley.

Otocoris alpestris entymia: Several horned larks in the recently acquired Howell collection were so at variance with our extensive series of the forms of *alpestris* known to occur in California, that we finally submitted the birds to Dr. Oberholser for identification. He pronounced them *Otocoris alpestris entymia*. Two more birds have been collected during the past year. These fall so naturally with the specimens examined by him that they are here incorporated under the same name. The data relating to the individual specimens, which are now in the Dickey collection, are as follows, it being noted that all captures were made in the desert area, east of the coastal drainage:

- No. 8628, ♀, Fort Yuma, Imperial Co., Jan. 29, 1913.
- No. 10037, ♂, shore of Salton Sea, Imperial Co., Feb. 1, 1913.
- No. 11931, ♂, Newberry Springs, San Bernardino Co., Dec. 8, 1917.
- No. 12509, ♂, Kane Spring, Imperial Co., Jan. 13, 1923.
- No. 12510, ♂, Kane Spring, Imperial Co., Jan. 13, 1923.

It has been suggested that these birds might be intergrades between certain races inhabiting areas more nearly adjacent to the stations of capture, thus merely paralleling *entymia*, instead of representing that race. However, the characters exhibited by these birds are such as to apparently preclude the possibility of accepting this hypothesis, and to force, instead, the recording of *Otocoris alpestris entymia* as a winter visitor to California.—DONALD R. DICKEY and A. J. VAN ROSSEM, *Pasadena, California, February 4, 1924.*

Unusual Bird Nesting Records for Southwest Saskatchewan.—In a paper that appeared in the May-June, 1923, issue of the CONDOR I was pleased to be able to record the first appearance in this corner of Saskatchewan of the Eastern Bluebird (*Sialia sialis*) in July, 1922. At the same time, I ventured to predict that before long we might see this species here again. Mr. Spencer Pearse, a neighboring rancher, tells me that last May (1923) a pair of Bluebirds appeared at his ranch. His natural hope that they would remain to nest in the spot was not fulfilled, as the birds departed after a couple of days' stay.

The Bobolink (*Dolichonyx oryzivorus*) is a rare bird in this neighborhood. In June, 1914, I saw a solitary male bird in a low-lying piece of meadow land near Mr. Pearse's ranch. In June of last year he had some half dozen pairs of Bobolinks nesting in this same locality and was greatly charmed with the singing of the cock birds.

The Cedar Waxwing (*Bombycilla cedrorum*) appears to be a common bird in most parts of Canada, so that its infrequent occurrence in this region is rather remarkable. In July, 1904, I saw a flock of about 30; in June, 1915, two pairs visited this ranch for a few days; and these are the only two personal records I have in twenty-two years. Mr. Pearse succeeded in finding last summer, for the first time, a nest of the Cedar Waxwing. It contained one egg; but on visiting the spot a few days later he found the nest deserted, though the egg was still intact.

On July 5, 1923, a friend gave me a Black-billed Cuckoo (*Coccyzus erythrophthalmus*) that had been killed by a cat. Upon examination it proved to be a breeding female, having a half formed egg in its oviduct. Until July 3, 1912, I never saw or heard of a cuckoo here; since then it has gradually increased, while last year I heard it in several places, and doubtless more than one pair nested in the district. It is a welcome visitor, for it appears to be one of the few enemies of the tent caterpillar, a pest that has increased considerably in recent years. In fact, it is more than likely that the increase in the numbers of this caterpillar accounts largely for the Cuckoo having extended its range westward.

In February, 1923, while out riding on horseback, I came across a band of about seven Sage Grouse (*Centrocercus urophasianus*). They are fairly easy to approach if it is done quietly, and these birds allowed me to ride within forty yards before betraying any uneasiness. The only sound they uttered was curiously like the "wow, wow" of a dog barking in the distance. In fact, for a few moments I thought it really was the dog belonging to a neighbor living about half a mile over the other side of a hill.—L. B. POTTER, Gower Ranch, Eastend, Saskatchewan, February 8, 1924.

The California Condor in Washington: Another Version of an Old Record.—When David Douglas, the great botanical collector, published (*Zool. Journal*, iv, Jan., 1829, p. 328), his "Observations on *Vultur Californianus* of Shaw," he referred to the range of this bird north of California as follows: "I have met with them as far to the north as 49° N. latitude, in the summer and autumn months, but nowhere so abundant as in the Columbia Valley between the Grand Rapids and the sea." Audubon (*Ornith. Biog.*, v, 1829, pp. 241-243) reprinted the paper, it was quoted both in the *Fauna Boreali-Americana* of Swainson and Richardson (vol. II, Birds, 1831, p. 1), and by Jameson in his edition of Wilson (*American Ornithology* [Constable's Miscellany] iv, 1831, pp. 259-261). It has been shown by Mathews and Iredale [*Austral Avian Record*, v, 1923, pp. 67-69] that this volume was published before volume II of the *Fauna Boreali-Americana*. This record by Douglas has remained the chief authority for "formerly north to Columbia River" of our Check-List.

In the *Canadian Naturalist and Geologist* of 1860, there is a very good life of Douglas by his friend George Barnston, of the Hudson's Bay Company, in which (page 208), there is an interesting reference to Douglas and a California Condor as follows:

"The Spring of 1827 was severe, and much snow had fallen. The consequence was that many horses died at Fort Vancouver, and we were visited by the various species of beasts and birds of prey that abound in that country. Most conspicuous among these were the California vulture. This magnate of the air was ever hovering around, wheeling in successive circles for a time, then changing the wing as if wishing to describe the figure 8; the ends of the pinions, when near enough to be seen, having a bend waving upwards, all his movements, whether soaring or floating, ascending or descending, were lines of beauty. In flight he is the most majestic bird I have seen. One morning a large specimen was brought into our square, and we had all a hearty laugh at the eagerness with which the Botanist pounced upon it. In a very short time he had it almost in his embraces fathoming its stretch of wings, which not being able to compass, a measure was brought, and he found it full nine feet from tip to tip. This satisfied him, and the bird was carefully transferred to his studio for the purpose of being stuffed. In all that pertained to nature or science he was a perfect enthusiast. It has been frequently a matter of surprise how quickly these birds collect when a large animal dies. None may be seen

in any direction, but in a few minutes after a horse or other large animal gives up the ghost they may be descried like specks in the æther, nearing by circles to their prey, when as yet one would not suppose the effluvia from the carcase had reached above a hundred yards. This renders it probable that their sight as well as sense of smelling is very acute, but that the latter can guide them entirely without aid from the other, I am certain, as I have started them from carrion within the edge of the forest under bushes which must have precluded the possibility of their seeing the carcase before they alighted on it."

Douglas sent a pair of California Condors to London. He gives the latitude and longitude of Fort Vancouver as the locality where they were taken. These were placed in the museum of the Zoological Society where they presumably remained till the museum was broken up in 1855. They are not in the British Museum, and it would be interesting to know if they still exist.—J. H. FLEMING, 267 Rusholme Road, Toronto, Ontario, February, 18, 1924.

Dotted Canyon Wren in Oregon.—On February 21, 1924, I collected a male Dotted Canyon Wren (*Catherpes mexicanus punctulatus*), about eight miles southeast of Ashland, Oregon. The specimen was identified by Mr. Stanley G. Jewett, who told me that this species has probably not yet been reported from this part of Oregon.—WM. E. SHERWOOD, Ashland, Oregon, February 26, 1924.

Another California Record for the Gray-headed Junco.—I shot a Gray-headed Junco (*Junco phaeonotus caniceps*) in La Puerta Valley (eastern San Diego County), November 3, 1923. It was alone and not wild. The specimen is now no. 44256, Mus. Vert. Zool., Berkeley.—FRANK STEPHENS, San Diego, California, March 6, 1924.

What Birds Hold Food With the Feet?—It has been of interest to me to note certain perching birds holding their food with the foot, after the manner of birds of prey. The California Jay has a habit of clutching an object firmly while working at it with the bill. Certain other perching birds have been seen doing this; but is it habitual?

In the *Auk* of July, 1918 (p. 360), an instance is given of the Orchard Oriole eating berries held in the foot. Vernon Bailey (Handbook of Birds of the Western United States, p. 463), relates how a Verdin clutched a lycium berry and picked out the pulp, resting the tarsus across the twig.

During the fall season I have found the Bailey Mountain Chickadee feeding on the fallen pine nuts, probably of Jeffrey and sugar pines. Whole flocks engage in hopping about the ground, making considerable stir in the dead dry leaves. When a seed is picked up in the bill it is de-winged and carried to a limb, board or other hard surface, upon which it is placed and then held there by grasping with one foot. In a short time a hole is formed by very vigorous pounding, and enlarged by breaking out the edges. Through this small opening the seed is eaten bit by bit.

A Plain Tit I watched at another season held some object against a limb while pounding it.

A Ruby-crowned Kinglet placed a long worm-like larva under one foot and stretched it by pulling with the bill. After repeating the stretching process from another limb, the larva was shaken, run through the bill sideways, and swallowed.—ROLAND CASE ROSS, Pasadena, California, March 6, 1924.

A Wintering Ground of the Yolla Bolly Fox Sparrow.—The race of fox sparrow known as the Yolla Bolly Fox Sparrow (*Passerella iliaca brevicauda*) breeds in California on the Trinity and Yolla Bolly ranges, at 5000 feet and over, and in the Coast Range as far south as Snow Mountain in the northwestern portion of Colusa County. The latter range extends in a scattering way southerly, or southeasterly, through Napa and Sonoma counties, until it peters out just north of the San Francisco Bay region.

The Yolla Bolly Fox Sparrow has been taken in midwinter in Marin County on various occasions (Mailliard, CONDOR, III, pp. 71-72; XIV, pp. 63-67; XX, pp. 138-139), and I have taken individuals of this race on Mt. St. Helena, Napa County, early in the spring and late in the fall, under conditions which made me think that these birds had chosen this locality for their winter resort. On this foundation, it has been my belief that a mid-winter examination of favorable localities would develop the fact that this fox sparrow regularly winters in this part of the Coast Range. For one

reason or another this examination was not undertaken until the present winter, when, toward the end of January (1924), I passed a couple of days on Howell Mountain, Napa County, at a place called "The White Cottages," eight miles from, and about north-northeast of, the town of St. Helena.

I had been informed that there is plenty of manzanita and other brush in this locality, and had concluded that it would be just the place to find fox sparrows in an ordinary winter, and possibly also in this extraordinarily rainless one. Upon looking over the vicinity, however, I found that the manzanita is the tall, spindly kind, not adapted to the wants of this sparrow, save for that growing in one spot, a few acres in extent, on a knoll just above my cottage.

This patch was good fox sparrow brush, consisting of chemisal, ceanothus, and manzanita, quite thick in places, and in it were some half-dozen of the birds for which I was searching, the Yolla Bolly Fox Sparrow. Two of them were secured for positive identification, another was shot but not retrieved, and glimpses were obtained of two or three others whose large bills and grayish coloration made it practically certain they were of this race. No individual of the *Unalaschcensis* group—with reddish color predominating—was noted at this time.

While it would have been more satisfactory to have obtained more specimens to prove my theory that this fox sparrow does winter along the Inner Coast Range, I was fortunate in finding any of these sparrows at all. The season had been such an abnormally dry one that almost the only places where one might expect to find birds were in the neighborhood of the few springs or streams which had not dried up, and there had been no water in the immediate vicinity of "The White Cottages" until the rain just previous to my visit. Birds of any species were exceedingly scarce on Howell Mountain at this time. I was told of some springs near which a number of birds might be found, but they were too far away for me to reach.

On February 29 and March 1 (1924), I visited the range on the east side of Napa Valley at a point about 12 miles by road north of the town of Napa. There I found quite a large brush-covered area, some hundreds of acres in extent, that was of the character especially attractive to the genus *Passerella*. This spot was fairly level, but at rather a low altitude in which to look for the Yolla Bolly Fox Sparrow, it being only about 1000 feet above sea level.

We arrived at this locality early in the afternoon of February 29, in the heat of a warm, dry day. Very few birds of any species were visible, but traces of fox sparrows, in the way of scratchings among the dead leaves under the bushes, were quite evident. Later in the afternoon several of these birds were seen and one was taken that proved to be the Yolla Bolly form. Two or three more of these "gray-backs" were noted at close range, but they were either too close or too active to be secured. As the search for a night's lodging in this vicinity was unsuccessful, the return over the rough road to Napa was made before dark.

The same locality was again visited early the next morning, March 1, when fox sparrows were found to be relatively abundant. The great majority of them were, however, of the *Unalaschcensis*, or reddish group. In fact, no individual of the Yolla Bolly Fox Sparrow was secured during the morning, although a few were seen which I am positive belonged to this race.

My experience seems to show that the Yolla Bolly is more shy than most of the other forms of fox sparrows, as it usually fails to take any interest in certain squeaky sounds made by an observer, except in the mating season, whereas other forms respond most readily. On this occasion some judicious "squeaking" attracted individuals of the *Unalaschcensis* group to such an extent that they came at times within a few feet of me, sneaking from bush to bush until they could get a look at the source of the sound, or at other times appearing suddenly on the top of some bush and acting in an excited manner. The Yolla Bolly Fox Sparrows, on the contrary, seemed to take no interest in my efforts to attract them, and I have had the same experience on occasions other than during the mating season, when all varieties are easily excited.

Probably Yolla Bolly Fox Sparrows were more numerous at a higher altitude on the range than that of the place over which I was working, this being at a lower elevation than any in which I had ever taken this sparrow. Time was not available, however, for investigating the higher parts of the range, as my plan was to visit that afternoon the range on the west side of Napa Valley, and the weather had become threatening.

A visit to the westerly range turned out to be a failure, because one of the roads crossing it at a point where there might be the proper sort of brush for my investigations was blocked and a great area in the region of Hood Mountain, which was one of my objective points accessible by road, had been recently swept clean by fire and there was no brush left to investigate.

As rain came on in the afternoon and my time was limited, I returned to San Francisco, at least satisfied that the winter range of the Yolla Bolly Fox Sparrow extends along the Mt. St. Helena Range as far south as it finds suitable cover, which is almost to Carquinez Straits.

It is rather remarkable that there are no records of the Yolla Bolly Fox Sparrow from east of the San Francisco Bay region, and none from south of it until Santa Barbara County is reached (Swarth, Revision of the Avian Genus *Passerella*, U. C. Publ. Zool., XXI, p. 166), in spite of a good deal of this country having been covered by well-known collectors in times past.—JOSEPH MAILLIARD, *California Academy of Sciences, San Francisco, March 5, 1924.*

Turkey Vultures Near Gridley, California, in Mid-Winter.—On the afternoon of January 13, 1924, I was out in a small boat on the Feather River in Butte County, California, with Mr. Gerald J. Chalmers, who resides on a ranch 3 or 4 miles south of East Gridley. We drew the boat up on a sand bar on the right bank of the river at a point about two miles south of East Gridley and stopped to look for a flock of Wood Ducks, which he had seen in that vicinity a few days before. To the south of us a short distance, four Turkey Vultures (*Cathartes aura septentrionalis*) were soaring over the river and not far away to the north three Western Red-tailed Hawks were flying together in circles. In a short while the vultures and hawks joined in one flock and continued for several minutes to circle about over our heads, flying just above the tree tops and about 150 feet away. This estimate of distance is a mere guess because it is very difficult to be at all accurate when looking straight up at a bird. The vultures were at any rate so near us that we could see them turning their heads as they examined the landscape. We could plainly see their white bills and (through field glasses) naked heads. This observation is of interest as showing a northward extension of the reported appearance of Turkey Vultures in mid-winter in the Sacramento Valley.—CLAUDE GIGNOUX, *Berkeley, California, January 28, 1924.*

EDITORIAL NOTES AND NEWS

THE CONDOR is not copyrighted. Anything and everything in it may be copied out and published elsewhere, with no legal bar to so doing whether or not permission has been obtained. A main purpose, we take it, of our magazine is service as a channel of record and dissemination of knowledge about birds. It is expected that worthy information appearing in THE CONDOR for the first time will not stay there forever, but will shortly be used by writers elsewhere—in monographic accounts and in books. At the same time there is a factor involved in the further published use of original materials that should be heeded—the ethical duty to make acknowledgment of original sources. This is customary and proper until such time as the portions of knowledge in question become so widely spread as to be considered common knowledge. There is no definite line here; but one's sense of propriety can

probably be relied upon to dictate when specific acknowledgment is or is not in order.

The English work entitled "A Practical Handbook of British Birds," which has been in course of publication by H. F. & G. Witherby (326 High Holborn, London) since March, 1919, is now completed. The whole work runs to over 1,500 pages of text, and gives no less than 350 text figures, besides 30 colored and monochrome plates. This was a co-operative undertaking, each of the several authors being responsible for information in his special field. These authors are: Dr. Ernst Hartert, Annie C. Jackson (Mrs. Meinertzhagen), Rev. F. C. R. Jourdain, Mr. C. Oldham, Mr. Norman F. Ticehurst, and Mr. H. F. Witherby, the latter acting also as editor of the whole work. As we stated in a former notice

(CONDOR, XXI, 1919, p. 174), this aggregation of authorities guarantees the general trustworthiness of the product. The finished work comprises the most authoritative technical treatise concerning British birds that we know of. We hope that in due course of time a work of the same well-ordered and comprehensive nature will be available for the western United States, if not for the whole of North America.

It is not an uncommon occurrence with any magazine for an imperfect copy to go out now and then—a copy in which there is a smeared or folded sheet, or some pages transposed, or even a signature omitted. In the case of THE CONDOR, the recipient of a defective copy should at once return it to our Business Manager, with request for replacement with a perfect copy. It should not be forgotten that complete, accurately collated sets of our magazine now possess a cash value far in excess of the original subscription price. Indeed, there has been a steady advance in market value as well as, we hope, in the scientific value of our series of publications. It is well worth the while of each Cooper Club member to watch out for this point—of seeing that his files are complete and contain only perfect numbers.

A new State list of birds for the West has just appeared, "The Birds of Oklahoma," under the joint authorship of Margaret Morse Nice and Leonard Blaine Nice (Univ. of Oklahoma Bulletin, new series, no. 20, May 15, 1924 [our copy received April 16, 1924!], pp. 4 + 122, 2 pls.). This contribution bears the stamp of good workmanship throughout, far better, for instance, than Oregon's first State list. This augurs well for the future rapid and secure development of Oklahoman ornithology. We note that of the 361 species, of formal entry in this list, specimens have been collected of 328. We heartily approve of Mr. and Mrs. Nice's standards for admission of species. They say: "Our policy in regard to sight records has been in the first place to admit to the state list on such authority only those birds whose occurrence would be confidently expected—i. e., that are regularly found in adjacent territory. Furthermore the acceptance of the report of each such probable bird has depended on three factors: the recognizability of the species in the field, the opportunity afforded for observation, and finally, the competence of the observer."

An increasingly felt need by teachers of ornithology in America has been for a suitable text-book in the general sub-



Fig. 40. ROBERT RIDGWAY (AT LEFT) AND CHARLES W. RICHMOND (AT RIGHT). PHOTOGRAPH TAKEN ON MR. RIDGWAY'S GROUNDS AT OLNEY, ILLINOIS, OCTOBER 22, 1922.

ject—not systematic, nor descriptive of species, but something dealing concisely in down-to-date fashion with flight, feather structure, molt, coloration, senses, behavior, voice, life cycle, instincts, ecology and distribution, etc. A very valuable series of ten lectures dealing with these topics has just been delivered by Dr. Glover M. Allen of the Boston Society of Natural History and published in an informal series of pamphlets entitled "An Introduction to the Study of Birds," under the auspices of the New England Bird Banding Association. Now, we are glad to hear, Dr. Allen is working over and expanding this series of lectures so as to constitute practically the general text-book of ornithology that is needed. This is to be published in the near future by the Marshall Jones Company of Boston. We have confidence that Dr. Allen, with his usual painstaking care, will produce a book of ideal reliability and usefulness.

PUBLICATIONS REVIEWED

DAWSON'S "BIRDS OF CALIFORNIA."*—At long last (14 years have elapsed since we sent in our subscriptions), and after many unforeseen vicissitudes, this prodigious undertaking has been successfully accomplished. It was the financial support of Miss Ellen B. Scripps, of San Diego, extended to the author at various times during the progress of the work, but in phenomenally liberal measure of very recent years, that made publication finally possible. On March 12, 1924, we received by express from Los Angeles our sets, complete. Our "edition" is the Book-lovers', in four volumes, and our particular copies are marked nos. 1 and 2. We understand that the text in all of the several editions is the same. The differences between the editions lie in the number of the more expensive type of plates and in

the kinds of paper, format and binding.

The total edition of the book will be large, a selling campaign will be vigorously pushed, and the work will thus be widely disseminated, among the general public as well as among those especially interested in birds. Covering, as it does, the whole field of Californian ornithology, it will, to a very great extent, be accepted by its readers as the authoritative source of information upon the birds of this state. That being the case, it is well, perhaps, to consider, as one aspect of the work, the effect it will have upon the rising generation of ornithologists (if such there be any longer!)—upon the youngster in his early teens who begins to take intelligent interest in the birds he sees about him, turning to books for information and accepting unquestioningly as verity everything that is printed.

First, to consider the illustrations: There can be no question as to the high rating of this feature of Dawson's work as compared with anything heretofore accomplished in this line. Dawson's "Birds of California" is in this outstanding respect scientifically valuable—it contains a marvelous wealth of pictorial studies of our bird-life. Practically every full species in the state is represented by three or more finely reproduced photographs, usually of typical environment, of nest, eggs or young, and of the bird itself. A great deal of potential informative value pertains to all of these—subject of course to the capacity of the user of the work to seek it out. The photographs of bird-life, by Dawson, Dickey, Finley, Pierce, and the rest of the contributors to this feature of the Birds of California, form an almost exhaustless storehouse of ornithological knowledge.

The Brooks drawings, both colored and uncolored, constitute a large element in the illustrative value of the work. Brooks' very best standards of ornithological portrayal are, to our minds, shown in his studies of the Scott Oriole, the Bufflehead, and the Black Oyster-catcher. Now and then we observe one of his bird portraits that impresses us less happily, for example, that of the Canyon Wren, which looks *huge* and which does not exhibit the pose commonly seen in that species.

All together, the photographs and drawings may be relied upon as perennial sources of appreciation for the well-informed, and as trustworthy moulders of impressions upon the beginner.

As to the text, most of it, too, may be praised unstintedly. Information is there

*The Birds of California | A Complete, Scientific and | Popular Account of the 580 Species and Sub-species of Birds | Found in the State | by | William Leon Dawson | of Santa Barbara | Director [etc., 2 lines] | — | Illustrated by 16 Photographures, 32 Full-page Duotone Plates and More Than | 1100 Half-tone Cuts of Birds in Life, Nests, Eggs, and Favorite Haunts, from Photographs | Chiefly by | Donald R. Dickey, Wright M. Pierce, Wm. L. Finley | and the Author | Together with 44 Drawings in the Text and a Series of | 48 Full-page Color Plates | Chiefly by | Major Allan Brooks | — | Booklovers' Edition | Complete in Four Volumes [paged consecutively clear through] | Volume One [- Four] | — | South Moulton Company | San Diego, Los Angeles, San Francisco | 1923 | Sold Only by Subscription. All Rights Reserved. Small 4to, pp. xviii+2122 [total], illustrations as above.

in more or less quantity, and entertaining reading as well. The beginner can refer to the small-type paragraphs heading each account for detailed descriptions and for technicalities of various other sorts, concisely presented, and for the most part dependable as to correctness. There are lapses, of course; but usually these are of little moment. The general accounts, though perhaps a little uneven, give a good all-round impression of each bird in this state. Some of these accounts are scientifically important for the new information they contain. Pre-eminent in this regard is Dawson's treatment of the Gray Flycatcher (*Empidonax griseus*). Here for the first time is given an accurate account (based largely upon his own observations) of the habits and habitat of this heretofore puzzling bird. We believe his conclusions regarding this species to be absolutely sound. Mention should also be made of the treatment accorded the Sierra Nevada Rosy Finch and the Ruby-crowned Kinglet, both of which receive merited attention. Other species, too, might be specified, but these in particular attracted us.

It is not fair, perhaps, to criticize an author for his style, and Dawson's style is peculiarly his own, as distinctive as Carlyle's and, to a more prosaic writer or critic, nearly as startling. It seems true, though (at least we found it so), that perfervid modes of expression begin to pall on the reader if he essays to read by the hour consecutively. To get the most pleasure out of the book, we recommend reading but one chapter in it at a time, coming to it fresh of mind, to get the most pleasurable reaction from it; just as it has been said by some critic that no one should read more than one of Jacobs' delightful short stories in an evening in order to enjoy it to the full.

As to the fraction of the text that does not impress us so favorably, it is distinctly saddening to note Mr. Dawson's consistently deprecatory attitude toward the student of nomenclature and systematics, and toward the collector of specimens. This antagonism is evidenced in numerous poignant thrusts directed at one and another recent worker, either on the basis of some proven error committed by said worker (and who, in any field, working for any length of time can avoid error!), or on the basis of some differing opinion on the part of Mr. Dawson. In the latter case, his personal opinion is set forth with a manner of assuredness, as when he records (pp. 758-760) two addi-

tional races of Robin for California. Consistency is not manifest. Discussions by others of nomenclatural tangles are stigmatized as "quiddities"; but, such an opinion being held, why not adhere to a recognized standard, such as the A. O. U. Check-List and its supplements? Why introduce such a "quiddity" as "*Junco oreganus couesi*," or as "*Zonotrichia gambeli nuttalli*," or as "*Fregata minor palmerstoni*?"

Mr. Dawson is an enthusiastic collector of eggs, in our opinion a perfectly justifiable, a laudable, and moreover a pleasurable pursuit, but one which he feels impelled to defend rather warmly. We agree with his arguments but believe they apply as perfectly to the collecting of skins, which he decries. His statement regarding the collecting of a nest and eggs of Cassin Purple Finch (p. 207), that it "is no more a moral issue than is the wringing of a cockerel's neck when the pot waits," might just as well be said regarding the Leconte Thrasher whose escape from his "murderous 8's" evokes his wish (p. 709) to have done with "this weary killing business."

Now as to our initial enquiry, What will be the effect of such teachings upon the impressionable youth of the land who happens to have an instinctive leaning towards natural history? Will he be likely to develop into a serious, productive ornithologist, or into a casual, sentimental ornithophilist? Frankly, we are dubious.

Well, we have stressed unduly, perhaps, certain features that cross our grain. We have, however, curtailed expression of its generally admirable nature, since the review of the first two "parts" of the book, which appeared in THE CONDOR for November-December, 1921 (p. 198), says much in favorable vein that applies to the finished publication.

In conclusion, as the reader of this review will easily perceive, we see many features of Dawson's "Birds of California" to praise without reserve; and we see features which to us seem unfortunate. The values inherent in the praiseworthy features—the artistic and the esthetic ones—undoubtedly overtop the less commendable ones, in a work intended primarily for popular use. Can we say more than that we are thoroughly content with the ownership of our sets, and that if we had not subscribed at the outset of Mr. Dawson's enterprise we most certainly would do so now?—J. GRINNELL and H. S. SWARTH, Berkeley, California, March 29, 1924.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

DECEMBER.—The regular meeting of the Southern Division, Cooper Ornithological Club, was held at the Los Angeles Museum on December 27, 1923, at 8 P. M., with President Pierce in the chair. Those present were Miss Burnell, Mrs. Law, Messrs. Chambers, Bishop, Dawson, Hanaford, Law. Visitors were Mesdames Bishop, Wyman and Dawson.

Minutes of the Southern and Northern Division for November were read and approved. New names proposed for membership were: Mrs. Florence V. V. Dickey, 514 Lester Ave., Pasadena, by Donald R. Dickey; Lloyd Peabody, 300 Globe Bldg., Saint Paul, Minnesota, by Rev. P. B. Peabody; Cecil A. Poole, Box 262, Monmouth, Oregon, by Stanley G. Jewett; William Remsen Varick, San Marcus Bldg., Santa Barbara, by Henry E. Parmenter.

Mr. Law moved that the Chairman appoint a committee to make up a slate for 1924 officers; seconded by Wyman, motion carried. Chair appointed Lee Chambers, Miss Burnell and J. E. Law on this committee, to retire and make up nominations. Results were as follows: President, L. E. Wyman; Vice-president, Dr. L. B. Bishop; Secretary, Mrs. Ella Haines Ellis.

Mr. Dawson spoke on his book, "The Birds of California," demonstrating the quality of the binding and strength of the pages. Meeting adjourned.—LUTHER LITTLE, *Secretary*.

JANUARY.—The regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Southwest Museum, Tuesday evening, January 22, 1924, at 8 P. M. Due to the large attendance to view Mr. Donald R. Dickey's moving pictures on the Birds of Laysan Island, President Pierce suggested the business of the Club be postponed until after the pictures. Mr. Dickey explained his wonderful pictures as they were shown, making it one of the best meetings the Club has held for a long time.

At the termination of the pictures, a short business meeting was held; minutes of the Northern and Southern divisions were read and approved. Nominations for 1924 officers were announced as in order. A motion by Dr. Miller that all

nominations be closed was seconded by Dr. Warmer and carried. Election resulted as follows: L. E. Wyman, President; Dr. Louis B. Bishop, Vice-president; Mrs. Ella H. Ellis, Secretary.

A letter from the Pacific Division of the American Association for the Advancement of Science was read, notifying the Cooper Club of the meeting to be held at Stanford University, June 25-28, 1924, and asking that two delegates be named to represent the Club at the meeting of the Affiliations Committee to consider program and so forth. Dr. Miller moved that members of the Northern Division should take care of this matter; seconded by Mr. Wyman and carried. Meeting adjourned.—LUTHER LITTLE, *Secretary*.

FEBRUARY.—The February meeting of the Cooper Ornithological Club, Southern Division, was held at the Los Angeles Museum, February 28 at 8 P. M. with President Wyman in the chair and the following members in attendance: Mesdames Barnes, Ellis, Law; Misses Burnell, Miller, Potter; Messrs. Allen, Barnes, Bliss, Bryan, Calder, Campbell, Hanaford, Holland, Law, Pemberton, Pierce, Reis, Robertson, Wood and Wyman. Visitors present were Mesdames Bliss, Bryan, Calder, Robertson, Reis and Wyman; Miss Brower and the Misses Vignos. Minutes of the January meeting were read and approved, followed by the reading of the January minutes of the Northern Division.

Names presented for membership were: S. H. Beattie, Tubac, Arizona, by Walter P. Taylor; Miss Bess M. Bruce, Glendora, and Miss Inez Cook, Glendora, by C. H. Wood; Dr. A. H. Cordier, 415 Benton Blvd., Kansas City, Mo., by W. Lee Chambers; James Benjamin Dixon, Escondido, by J. Dixon and J. Grinnell; Henry W. Johnson, 284 E. Orange Grove, Pasadena, by J. Eugene Law; F. E. A. Kimball, Tucson, Arizona, by Walter P. Taylor; Lester Lynn Snyder, Royal Ont. Mus. Zool., Toronto, by W. Lee Chambers; William S. Wright, Nat. Hist. Mus., Balboa Park, San Diego, by Clinton G. Abbott; Charlotte Stahl, 5137 Hermosa Ave., Eagle Rock, by Jessica A. Potter; Harry A. Staub, Brawley, by John C. Fortiner. The Northern Division sent eleven names.

Mr. Law spoke briefly of the activities of the Bird Banding Chapter, of the recent meeting, and the plans to hold regular meetings the second Sunday of

each month. The feature of the evening was an informal talk by Dr. W. A. Bryan, Director of the Museum, on "Birds of Laysan Island Twenty Years Ago." This was of particular interest, following as it did, the motion pictures of Laysan Island, shown by Mr. Dickey at last month's meeting. Dr. Bryan described the vegetation of the island at that time, also the nesting sites of the various birds, illustrating his remarks with a representative lot of skins brought from the island in 1913 by Mr. Willett. Mr. Wyman voiced the appreciation of the club in thanking Dr. Bryan for his very entertaining and instructive talk. Adjourned.—ELLA H. ELLIS, *Secretary*.

NORTHERN DIVISION

FEBRUARY.—The regular monthly meeting of the Cooper Ornithological Club, Northern Division, was held at the Museum of Vertebrate Zoology on February 28, 1924, at 8 P. M. President Dixon presided, with the following members present: Misses Beaman, Burk, Fisher, Humphrey, Pringle; Mesdames Allen, Delport, Ferguson, Frederick, Grinnell, Mexia, Schlesinger; Messrs. Borell, Bryant, Bunker, Carriger, Coolidge, Cooper, Cozens, Elmore, English, Evermann, Fisher, Grinnell, W. Grinnell, Gignoux, Hunt, Kibbe, Kloss, La Jeunesse, Lastreto, Mailiard, Morley, Rankin, Simpson, Swarth, Wright. Visitors were: Misses Brubaker, Burk, Glasier, Hanscom, Holden, Howard, Pickard; Mesdames Bunker, Coolidge, Cooper, Evermann, Hunt, Steilberg; Messrs. Ferroggiaro, Huestis, Steck.

Minutes of the January meeting of the Northern Division were read and approved. Minutes of the Southern Division for November were read. Mrs. Harriet S. Harding of Forest Ranch, Butte County, California, was proposed for membership. Resignations of Mr. and Mrs. C. R. Thomas were read and accepted.

A motion made by Mr. Swarth, seconded by Mr. Kibbe, was adopted, that certain cases of mounted birds presented to the Club in 1895 by Mr. G. Frean Morecom and for some years past nominally in the possession of the California Academy of Sciences and of the Museum of Vertebrate Zoology be formally presented to these institutions, respectively.

Mr. Evermann reported upon the meeting of the Affiliations Committee of the Pacific Division of the American Associa-

tion for the Advancement of Science.

Mr. Grinnell moved that the Northern Division endorse the resolution presented by Mr. Law of the Southern Division in November, declaring that the Cooper Ornithological Club earnestly requests the people and the Congress of the United States and the people and the Parliament of the Dominion of Canada to secure such amendments to existing law and the enactment of such new laws as will give to all units in the international park system complete conservation alike, and will safeguard them against every industrial use either under private or public control, at least until careful study shall justify the elimination of any part from park classification. Motion seconded by Mr. Bryant and duly carried.

Mr. Bryant led a discussion upon the Public Shooting Grounds Bill, pointing out its chief merits and demerits. Mr. Kibbe stated that the Audubon Society of the Pacific has, after careful investigation, endorsed the bill. A motion suggesting an amendment to the bill was, following an enlightening discussion, lost and in its place a resolution was passed recording unqualified approval of the bill by the Northern Division of the Club and instructing the Secretary to forward a record of this approval to our congressmen.

Mr. Swarth recorded seeing an unusual bird on a Berkeley street, the Australian Bronze-winged Pigeon (*Ocyphaps lophotes*), doubtless an escaped cage bird.

Mr. Dixon commented upon the destroying of birds found in corrals in compliance with endeavors being made to check the spread of hoof and mouth disease. He suggested that the loss to bird life would be more than compensated for by the destroying of stray cats also ordered.

The speaker of the evening, Dane Coolidge, talked for an hour most entertainingly upon his experiences in 1900 as a field collector in southern Italy. The vivid and humorous pictures which he sketched of the tribulations of a collector among the superstitious and temperamental inhabitants of Sorrento and Sicily will long remain a pleasure to those members of the Northern Division who were so fortunate as to have been present at the February meeting. Adjourned.—HILDA W. GRINNELL, *Secretary*.

MARCH.—The regular meeting of the Cooper Ornithological Club, Northern Division, was held at the Museum of Vertebrate Zoology on March 27, 1924, at 8

P. M. President Dixon occupied the chair and the following members were present: Misses Beaman, Fisher, Flinn, Humphrey, Van Gaasbeek, and Wythe; Mesdames Allen, Bogle, Delpont and Grinnell; Messrs. Bryant, Bunker, Carriger, Clabaugh, Deane, Evermann, English, Grinnell, Hunt, La Jeunesse, Lastreto, Mailliard, Miller, Rankin, Simpson, Streator, Swarth, Trost, and Wood; visitors, Misses Allerton, Chattin, Alice Chattin, Franks, Howard, Martin; Mesdames Evermann, Bunker, Bryant, Hunt, Rankin; Messrs. Booth, Kaufmann, Haley, Hall, Radir.

Minutes of the February meeting were read and approved. Minutes of the Southern Division for December, January and February were read. Proposals for membership were: E. Raymond Hall, Berkeley, by J. Grinnell; Hildegard Howard, Los Angeles, by Edna Fisher; Cavendish Moxon, Los Altos, by H. W. Grinnell; Ernest H. Quayle, Stanford University, by J. E. Law. The resignation of Susan H. Mackay was read and accepted.

A letter was read from Representative MacLafferty acknowledging receipt from the Club of its resolution favoring the adoption of the Public Shooting Grounds Bill. A letter from Senator Shortridge was read announcing his active support of this same bill.

A letter from the Ecological Society of America requesting the aid of the Cooper Club in a campaign looking toward the establishment of a National Monument at Glacier Bay, Alaska, was discussed. Upon motion by Mr. Mailliard the following resolution was unanimously adopted.

WHEREAS, our national parks do not now include among their number any example of tide-water glacier; and

WHEREAS, the glaciers of Glacier Bay, Alaska, are as a group most typical and accessible; and

WHEREAS, there are immediately contiguous forests of magnificent growth which are subject at any time to commercial exploitation; therefore,

BE IT RESOLVED, that the Cooper Ornithological Club, Northern Division, earnestly recommends the setting aside of a suitable tract, inclusive of Glacier Bay, as a National Monument.

An invitation from the third Pan-American Congress to be present at the meeting at Lima, Peru, in November, 1924, was laid on the table.

Mr. Lastreto brought to the attention of the Club the "International Crow-Shooting Contest," advertised in the March issue of the Du Pont Magazine. After a thorough discussion the unanimous opinion of the meeting was voiced in the following resolution, as introduced by Mr. Grinnell and amended by Mr. Lastreto.

WHEREAS, it has come to the attention of the Cooper Ornithological Club, Northern Division, that much publicity is being given to an "international crow-shooting contest", to include the awarding of numerous prizes for the destruction of not only crows but many other so-called vermin (hawks, owls, bobcats, turtles, water-snakes, etc.); and

WHEREAS, alluring advertisements to this effect are appearing widely in outing magazines, urging unlimited shooting of said "vermin" between March 15 and June 15 (that is, during the closed season for game and during the nesting and breeding season of all sorts of harmless and useful birds and other animals); therefore

BE IT RESOLVED, that the Cooper Ornithological Club, Northern Division, heartily deplores said campaign of extermination, and hereby makes protest to the dealers in arms and ammunition and to the publishers of their advertisements, on the following grounds:

(1) The average hunter to whom such inducements would appeal cannot distinguish the few really injurious kinds of birds and other animals that would inevitably suffer, from the many which are of positive economic or esthetic value.

(2) Most of the kinds that would be killed are, in fact, now protected by law, and the proposed contest therefore invites law-breaking.

(3) An opportunity is afforded the careless hunter to kill game out of season.

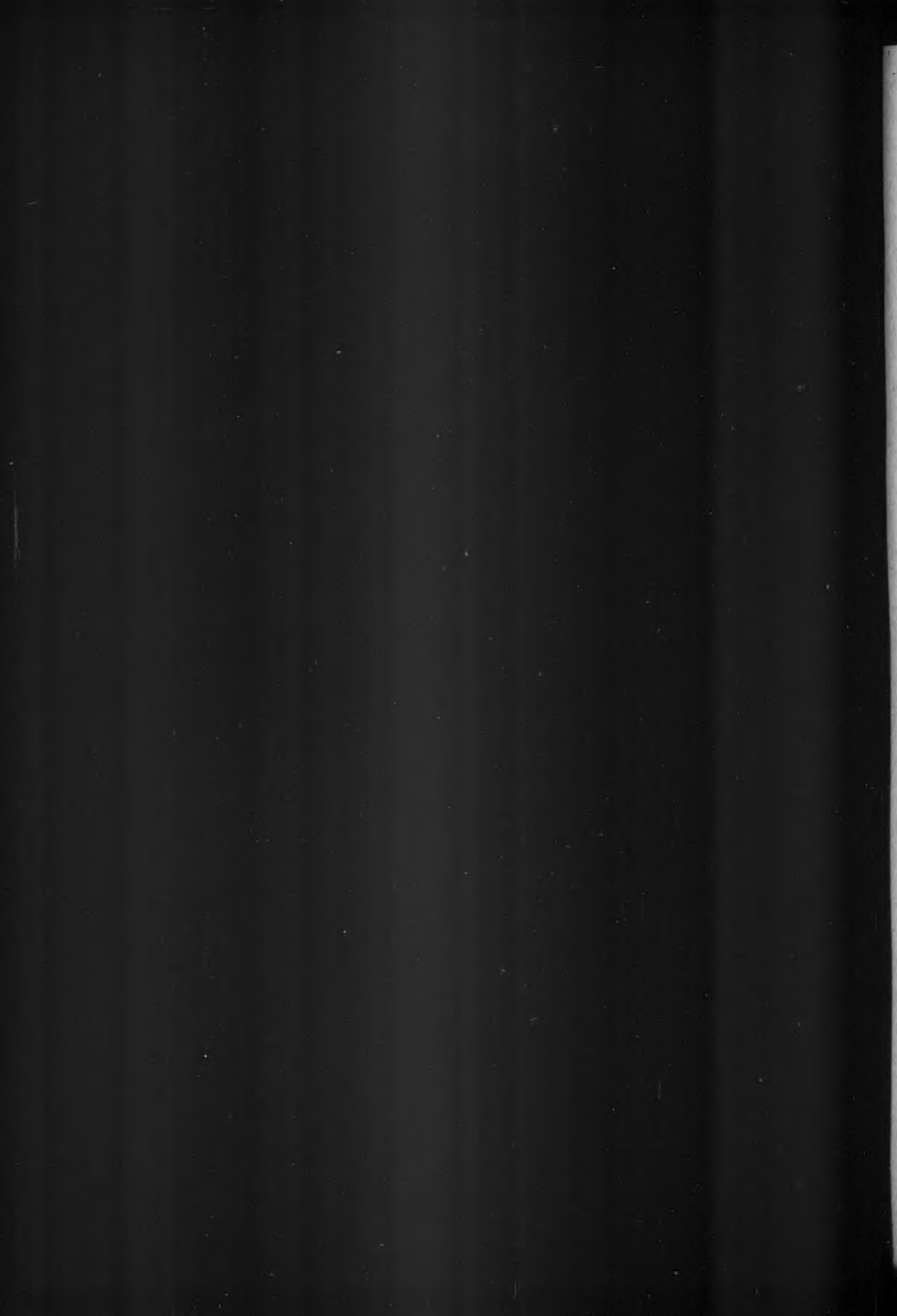
(4) The game warden will find during the season of this contest difficulty in apprehending violators of the existing protective laws. And further,

BE IT RESOLVED, that the Cooper Ornithological Club, Northern Division, for the reasons stated above hereby warns conservation societies, boy scout organizations, and educational institutions NOT to countenance the proposed "international crow-shooting contest."

The Chair then called for informal reports from members. Mr. Swarth commented upon Dawson's "Birds of California." Miss Van Gaasbeek asked if other members had noted the apparent and unusual scarcity of birds about the Campus. Mrs. Allen and Miss Wythe considered the stadium built across the mouth of Strawberry Canyon a bar to the approach of ground-feeding birds toward the lower Campus. Mr. Clabaugh reported that fox sparrows and golden-crowns are abundant above the stadium. Mr. Bryant observed that there is always an apparent annual scarcity of birds in February. But the consensus of opinion remained that, possibly owing to the drought, birds are not as abundant as usual this winter in the Bay region. Mr. Streator reported varied thrushes as unexpectedly rare at Santa Cruz. So are the robins in Golden Gate Park, according to Mr. Mailliard, and winter birds in general at Atherton according to Mr. Lastreto.

An honored guest of the meeting was Mr. Ruthven Deane of Chicago, one of the early members of the American Ornithologists' Union, and a member of the Cooper Club these twenty years. Mr. Deane recalled pleasantly his experiences in California in 1883, when he visited San Francisco and Santa Barbara.

Adjourned.—HILDA W. GRINNELL, Secretary.



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